IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF OREGON

FEREYDUN TABAIAN and AHMAD ASHRAFZADEH,	)	
Plaintiffs,	)	No. 3:18-cv-00326-HZ
vs.	)	June 20, 2019
INTEL CORPORATION,	)	Portland, Oregon
Defendant.	)	

CLAIM CONSTRUCTION HEARING

TRANSCRIPT OF PROCEEDINGS

BEFORE THE HONORABLE MARCO A. HERNANDEZ

UNITED STATES DISTRICT COURT JUDGE

APPEARANCES

FOR THE PLAINTIFF:
Jeffrey S. Love
James G. DeRouin
Klarquist Sparkman LLP
121 S. W. Salmon Street
Suite 1600
Portland, OR 97204

Howard L. Close
Ronald L. Flack, Jr.
Wright Close & Barger, LLP
One Riverway
Suite 2200
Houston, TX 77057

FOR THE DEFENDANT:
Renee E. Rothauge
Markowitz Herbold PC
1211 S. W. Fifth Avenue
Suite 3000
Portland, OR 97204-3730

Michael J. Summersgill
Jordan L. Hirsch
Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109

Grant K. Rowan
Todd C. Zubler
Wilmer Cutler Pickering Hale and Dorr LLP
1875 Pennsylvania Ave NW
Washington, DC 20006

ALSO PRESENT:
Thomas Lee, litigation support
James Gripp, litigation support
Mashood Rassam, Intel counsel
Kimberly Schmitt, Intel attorney
Luke Motley, IV, attorney
James Geringer, attorney

COURT REPORTER:
Nancy M. Walker, CSR, RMR, CRR
United States District Courthouse
1000 S. W. Third Avenue, Room 301
Portland, OR 97204
(503) 326-8186

P R O C E E D I N G S

THE COURT: Welcome back. Have a seat.

THE CLERK: Your Honor, we're here today for a claim construction hearing in the matter of Tabaian, et al. versus Intel Corporation, Case No. 18-cv-326.

Counsel, please state your appearances for the record, starting with the plaintiff.

MR. JEFFREY LOVE: Jeff Love for plaintiffs, Klarquist Sparkman.

MR. DeROUIN: James DeRouin, Klarquist Sparkman, for plaintiffs.

MR. FLACK: Ronald Flack, Wright Close & Barger, for plaintiffs.

MR. SUMMERSGILL: Your Honor, Michael Summersgill, Todd Zubler, and Jordan Hirsch from Wilmer Hale on behalf of Intel, and Renee Rothauge on behalf of Intel.

THE COURT: Welcome.

MR. SUMMERSGILL: And, Your Honor, as we submitted to you, we've worked out with the parties a proposed order of the terms and who will be arguing first on each one. And I believe you had indicated you're okay with that approach?

THE COURT: Absolutely.

MR. SUMMERSGILL: Okay.

THE COURT: Whatever makes it easier and more efficient.

MR. SUMMERSGILL: Okay.

THE COURT: So just tell me which direction you want to go. I have my outline here. Let me know.

MR. SUMMERSGILL: I think we're going to start with the "droop output" term and move on from there, and the plaintiffs will start with "droop output."

MR. JEFFREY LOVE: Yes.

MR. SUMMERSGILL: And you get to learn more about voltage regulators.

THE COURT: I don't know if my brain can take any more.

So be it. Let's go.

MR. JEFFREY LOVE: Also, with respect to arguing the terms, the parties conferred. And both parties, as I understand it, would like to have different attorneys argue different terms, but just one attorney for the one term, if that's okay with you.

THE COURT: That's fine. Sure.

MR. JEFFREY LOVE: Your Honor, Jeff Love for plaintiffs.

The first term that we're going to argue is "droop outputs." The focus -- actually, all of the terms appear in Claim 1, so the focus is going to be primarily on Claim 1. But there are a few other terms that are asserted, and the same terms appear in some of the other claims as well, which

can be important to look at the other claims to just understand any claim term, including "droop outputs."

As was indicated at the tutorial yesterday and in the briefing -- the parties have briefed it at some length -- there's just a fundamental difference in the approach to claim construction here, where essentially Intel is arguing that the plaintiffs are seeking broad constructions for Claim 1 that aren't limited to the embodiments that are disclosed, or the primary embodiment, at least, that's disclosed in the patent.

And the plaintiffs are arguing that Intel is unfairly arguing for narrow claim terms that are limited to just the embodiment in Figure 1 and they're trying to essentially import limitations not just from the specification, which is the entire patent, essentially, but also from dependent claims into Claim 1, and that that -- so a fundamental issue is, you know, how is this Court going to be construing these claims? What is the approach going to be: to tie it to the preferred embodiment or to give Claim 1 broader scope?

And in that regard, I want to start by talking about, you know, some of the statutes that govern claim construction and the case law governing claim construction. And this will apply to all the claim terms, but including "droop outputs."

First off, claim drafting is an art. Claims typically are drafted not by the inventors, but by patent attorneys. So the inventors have an invention in mind. They

come to the patent attorneys. And the patent attorney's job is to sort of separate the wheat from the chaff in certain respects, to try to identify what is the invention, the essence of the invention, so that the patent attorney can help the inventors by claiming it broadly, even though the inventors might have in mind primarily the best way of doing it, so a very specific way of doing it.

And a lot of times, you know, that's something that the inventors don't even understand, that there is this minutiae of patent law about how you go about drafting the claims. And the minutiae of patent law relates, in part, to the statutes that govern how you draft claims, which one needs, to some extent, to be a patent lawyer to understand well.

So there is a Section 112, 35 USC Section 112, that relates directly to how claims are construed. And, in particular, 112(f) is a specific provision that allows patent prosecutors, as they're called, to limit claim elements to particular embodiments that are described in the specification. And there's a general way of triggering that. It's generally by having "means for" type language in claims.

And one of the issues in claim construction is whether any of the parties are going to contend that any of the claim limitations are subject to Section 112 limitations or analysis. And here Intel has not contended that for any of

the claim limitations, so they are not arguing that the special statutory provision that would limit a claim element to just the embodiments described in the specification and their equivalents applies to any of the terms at issue.

Another tool that the patent statutes provide for is a -- is there are statutes that allow for dependent claims. This allows patent prosecutors to layer the claims with multiple different breadths. And the drafters did that here, and the Patent Office accepted that, not all of them, but many of them.

So, for example, we have submitted into evidence with our claim construction brief the original 67, I believe it was, claims that the applicants submitted with their patent application. And the Patent Office said that, well, some of these claims are to different inventions, related, but different. And so they said, "We're not going to give you all these claims."

And so what was done is an election was made during the file history where the plaintiffs chose the first -- I believe it was 37, possibly 36 claims. And of those 36 claims, there's only one independent claim.

And the patent statutes, Section 112 in particular, addresses an independent claim and dependent claims. And I've got Section 112 here that I'd like to put up on the screen, just to show you what it says about that.

So, first, Section 112, 35 USC Section 112, talks about the specification. And, in general, pretty much everything in the patent that issues is the specification; although there's different parts of it, obviously, the claims, the figures, the rest of it.

And then it says the specification -- one thing it says: It shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

Now, one of the things Intel is essentially arguing is, look, you know, you look at the patent, and it talks a lot about this one particular way of carrying out the invention. True, but that's because Section 112 requires the patent to talk about at least one particular way of carrying out the invention. It's supposed to be the way that's considered best, but it doesn't mean at all that the patent is limited to that.

Then Section 112 goes on to say that the specification shall conclude with one or more claims. So it contemplates a variety of claims. And then at section (c) it says that a claim may be written in independent or in dependent or multiple dependent form. And a claim in dependent form shall contain a reference to the claim previously set forth and then specify a further limitation.

And then it directly addresses how such claims are to be construed. A claim in dependent form shall be construed to

incorporate by reference all the limitations of the claim to which it refers.

So what we have here is one independent claim, Claim 1, and then about 35, maybe 36 dependent claims that add additional -- sometimes circuitry to it. And so if you remember yesterday, you saw all these details in Figure 1, and the plaintiffs' expert is saying, yeah, but the details in Figure 1 aren't all in Claim 1; only some of them are. Most of those details are added in dependent claims.

And then it also has here -- 112(f) talks about an element in a claim may be expressed as a means or step for performing a specified function without reciting the structure, and such claim shall be construed to cover the corresponding structure described in the specification and equivalents thereof.

So that's the specific statutory provision that Congress provided for claim drafters to limit their claims, or at least an element of the claim, to just what is described in the specification. It's supposed to make it easy for a patent applicant who just wants a narrow claim to the best mode essentially of what he invented or the best modes that he's going to describe.

And that's not at issue here, because Intel doesn't contend and plaintiffs don't contend that any claim element is subject to 112(f) rules regarding claim construction.

Then Section 113 talks about the drawings. And there was a lot of focus yesterday -- and I expect today -- on Figure 1, to some extent Figure 2. There are only two drawings and yet there's 36, 37 claims. Why is that? I want to address that.

So it says -- Section 113 says the applicant shall furnish a drawing where necessary, and then the director may require its submission and so forth. Well, that seems pretty optional. Well, that's pretty optional.

But the Patent Office issued regulations. So this is 37 CFR Section 1.83. And this is what the director has to say about it: The drawing in a nonprovisional application -- which is a typical patent application that results in a patent -- must show every feature of the invention specified in the claims.

So why is it that Figure 1 is larded, as I'll say, with, you know -- with all these detailed circuitry where, from the plaintiffs' standpoint, a lot of those details only come up in dependent claims. It's because all 36 claims -- indeed, this was filed -- Figure 1 was filed with the original application which had 67 claims. And the obligation of the people making those drawings was to -- under the Patent Office rules, is to show every feature in the claims, plural. So it's the smorgasbord. Figure 1, Figure 2 are designed to show all the circuit elements in all the

claims.

Now, one could, if one had more money and it wanted to take the time, draw a separate figure for each of the original 67 claims. There's some cost involved in that. A lot of times, you know, people -- anyway, cost is a factor with applications.

So what's the minimum? The minimum is get one figure in there -- in our case, two -- that covers all the features and then rely on the Court to understand that just because details are in Figure 1 doesn't mean it's in the broadest claim.

I think that a lot of the -- a lot of the differences between the parties as to how these claims should be construed relate to those issues. To some extent, you know, Intel's arguments boil down to arguing that the claims as drafted -- that is, if you just construe them broadly the way plaintiffs say -- that that's too broad and, you know, that there's not enough support in the patent to, you know, cover the breadth, you know, that the plaintiffs are asking the Court to provide for Claim 1.

That is not a claim construction issue. So Section 112 that I just showed you has certain provisions requiring support in the patent, and there's all sorts of rules and whatnot about that.

Plaintiffs, in their invalidity contentions, made

only one narrow Section 112 argument about Claim 1 not having support in the specification. It had to do with the word "droop outputs." And the idea is that the claim has "droop outputs" in the plural; and they say the patent, in particular pointing to Figure 1, only shows one droop output. They say that's a Section 112 issue.

That's an issue for the jury down the road or, if the Court can decide it on clear and convincing evidence on summary judgment, then possibly then, but that's not now.

Now, one of the -- you know, the final legal point I want to make is I want to refer the Court, once again, to a case that we've referenced several times in our briefing, because it's a recent case by the Federal Circuit involving Intel and involving electrical devices, where the District Court in this case was asked by Intel to do what this Court is being asked to do, which is to construe the claims narrowly in order to -- to read on the main embodiment discussed in the specification. The District Court did that. The District Court was reversed. And the reasoning is directly relevant to what I've just been describing about Section 112.

So the case is *Continental Circuits v. Intel Corporation*, 915 F.3d 788. And the opinion -- which if there's one case, you know, the Court were to focus on afterwards, I would say this is it, because the opinion touches on many of the issues important here.

So the key issue, as described by the Court, is that all the asserted claims include claim limitations, which the District Court construed together as Category 1 terms, and their construction depends on resolving whether they should be limited to a repeated desmear process.

Now, we don't need to know what that is. All we know is that the claims didn't literally require it. But the argument was that because of the prominence that that process was given in two places, both in the specification and also by inventors, in statements by the inventors -- and here, again, we have Intel relying on certain statements by some of the inventors -- that the Court should limit it that way, even though there is nothing in the claim that would support that.

So in particular when it comes to the evidence of -- of it requiring that Intel in this case relied on two statements of an expert that was submitted, the expert declaring that the patent clearly describes a two-etching process, documents produced by the inventor stating, quote, We use a double pass desmear to achieve the tooth structure, end quote, the thing about such statements is what do the inventors really have in mind? They have in mind the best mode of doing it.

They might not even see the claims, you know, until the application is filed. That's something the patent lawyer does. They come to the patent lawyer and say, "This is the

best way of doing it."

And so you get these statements. That's extrinsic evidence, as this Court will point out, not intrinsic evidence. Extrinsic evidence, under the Fed Circuit rules, is less important to claim construction, as a general matter, than intrinsic evidence, which is the claims themselves, the patent itself.

And so the only issue on appeal was this claim construction issue. And so the first thing the Court did in its analysis is it notes that none of the asserted claims actually recite a repeated desmear process. Thus, at least based on the plain language, the claims are not limited to a repeated desmear process.

That first step is no small step. And we have that here with almost every claim term. So you've got "droop outputs." It doesn't refer at all to a droop function. And, as you know, as was discussed yesterday, "droop" has a broader meaning of "droop loss," that can relate to any loss of voltage or spike in voltage.

And then the patent -- the opinion goes into whether there is something in the patent that would clearly limit the claims, even though they're broad on their terms, to just some narrow embodiment. And what it emphasizes is that when you actually go through the patent process, through the patent, you just see when they refer to the double desmear process,

whatever that is, they do so by saying, One technique is this. It can be can done this way.

Even just looking through Intel's brief, typically on every term that they argue for -- and "droop outputs" being one -- you know, they will say something like, "The patent says it must be done to do this," and then they quote sometimes in the same brief the patent that they're relying on, and it says "may," not "must." And so you'll see in our brief, you know, "may" does not mean "must."

And patent drafters, they're trained to be careful in that respect. They are trained to make it clear, when they want to have, you know, 67 claims, 37 claims, to be clear that when they're describing the best way of doing it, you make sure it's optional, so you use the word "may" for a reason, you know. And the reason is so that at moments like this, the Court will know that it is not required.

And that's what the Federal Circuit was relying on here, was just that kind of language. So it points then, too, with respect -- it says, for example, you know, this or that. That doesn't mean "must." It's not a clear statement, you know, clearly setting forth a definition of some disputed claim term, other than its plain and ordinary meaning, which would be a broad meaning, typically. And then it goes on to -- to make that point.

But then you also have this. You know, you have the

fact that the patent overwhelmingly focuses on one embodiment. Now -- the embodiment of Figure 1, you know, and also as shown in Figure 2, which is unusual, to have patents that only focus on one embodiment. And what's the minimum for a patent? You've got to do one best mode.

In fact, though, the patent does have other embodiments in it, just not in the figures. But in the text it talks about other ways of doing that, and our brief refers to that.

And, also, the patent incorporates the provisional application, so it's incorporated into the patent by reference. It's in the record. It includes 15 figures, which I think the first six are just prior art voltage regulators, so it's after that, starting with Figure 7 or 8. So Figure 8 was shown during the tutorial yesterday. It's the hand-drawn thing, you know. So those figures are other embodiments of doing it.

And so, for example, some of those embodiments, you know, just have a sense output and not a droop output or -- and when they're doing the sense output, they don't have any temperature input. So, you know, there are just alternatives that are talked about in the provisional application.

But the patent itself has got the one main embodiment shown in Figure 1 and Figure 2. And when I say "the patent

itself," I just mean the actual document. I mean, it does incorporate the provisional by reference, so that is part of the patent itself in a way.

And what the Federal Circuit in this *Intel* case said is that the Court has expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. And then it cites another Federal Circuit case to the same point.

And when it went through, you know, some of the other evidence, like the expert declarations -- you know, there can be a lot of evidence. Like here, they rely on the inventor testimony of inventors who haven't looked at the patent for years -- you know, the patent was 10 years ago -- and who, themselves, the two inventors who are co-inventors, who are not parties -- there's four inventors on the patent. Two of them are plaintiffs in this case. Two are not. They live in England. So Intel went over to England and deposed them, and then they put in some of the select transcripts of that into the record here. But neither of them had read the patent recently, and both of them said that it's Ahmad Ashrafzadeh who was the expert in this field; they were assisting him.

So that kind of testimony -- well, as the Federal Circuit said in this case, "Generally we have viewed extrinsic evidence such as that as less reliable than intrinsic

evidence."

So the inventors talked about the two passes through the desmear process. However --

THE COURT REPORTER: Counsel, when you read, I'll ask you to slow down.

MR. LOVE: So the Court says that the inventors talked about the two passes through the desmear -- that's d-e-s-m-e-a-r -- process, but those statements reflect use of the preferred embodiment that is the best mode or the best way of doing it. And they give no indication that they have any limiting effect on the claims themselves.

And so as we point out in our brief, if you go actually and look at the testimony that Intel sometimes relies on with respect to the inventors, often they're talking about Figure 1, not Claim 1, or just about the invention as they understood it, not Claim 1.

So with that as background, I would like to address the issue of droop and, in particular, the droop outputs.

So as you recall from yesterday, these are figures that were presented yesterday during the tutorial. Here's Figure 1 in the sort of a block format that has all the inner circuitry. But if you take out the inner circuitry and you're talking about droop outputs, you're talking about circuit blocks that are discussed in Figure 1 and then an interface between the calibration control circuit and the regulator

circuit block, where one of the interfaces is going to be the droop outputs. But none of that internal circuitry is referred to in Claim 1 that essentially feeds Intel's proposed claim construction for "droop outputs."

And let me clarify what the parties' two proposals are, just to refresh your recollection. So plaintiffs' proposed construction for "droop outputs" is "outputs of the calibration control circuit used to adjust voltage in circuitry" -- so very broad, you know, any adjustment to the voltage in the circuitry -- but then "in a system that includes a droop function that can lower output voltage based on output current."

So we acknowledge that the patent does talk about systems that have a droop function, but our point is that Claim 1 doesn't limit the droop output to -- to an adjustment to that droop function.

Now, droop function, you may remember yesterday from the tutorial, it often is graphed as a line where, as current raises, as current gets higher, the voltage gets -- is forced lower and vice versa. So it can be sort of a straight line.

And there's two types of adjustments, at least two types of adjustments that can be made to such a simple formula. One of them is, you know, you can change the set point. So the line may have the same angle, but you can move it up or down.

So you saw they would have, for example, maybe 2 volts would be the desired, the midpoint, 1 volt is the min, you know, 3 volts is the high. So you're going to have a line in between there that's going to be your load line. Well, you can move that up or down. You can also change the angle. So there are adjustments that can be made to the droop function. That's not discussed in Claim 1.

And what Intel's proposed construction is is "outputs of the calibration control circuit used to adjust the droop functions; i.e., the function that automatically lowers the output voltage based on the output current." And they explained in their briefs it would also automatically raise it at times, you know, depending. It's a mathematical function.

And our point is, look, there's a lot of things going on with circuitry that affects the actual output voltage, and that droop outputs, as discussed in the patent -- it talks about droop outputs achieving a number of different goals. Some of those are discussed in some of the dependent claims, and using calibration data to do it. And the calibration data, the data that's stored in nonvolatile memory, is discussed in dependent claims. And it's not simply to adjust the set point of a droop function or to adjust the slope of a droop function. And so that's why, primarily, we argue that "droop outputs" should be construed more broadly.

And, in particular, I'd like to point out a few

places in the patent -- Let me just say that claim construction, there's a lot of things that are interesting to point to in claim construction. So they've got some inventor testimony from London, people who hadn't looked at the patent for a decade maybe. You know, there's dictionary definitions, also extrinsic evidence. There's the file history. But overwhelmingly, claim construction is based on reviewing the patent. So, to me, it's instructive that the patent's title is "Droop Loss Compensation." It doesn't say "droop function."

And, you know, one of the things that patent lawyers do when they're going through a patent, they just go through for where is the term used and how is it used?

So here you do have -- let's see if I can manage to actually work this machine. Perfect.

So here you do have the one reference to "droop function" in the patent, and it's in something called "Background of the Invention." Plaintiffs are not -- so Background of the Invention is an area where typically you talk about what's already known in the prior art and then what are the problems with it, what are the things you're going to try to solve or whatever. But droop function was known in the prior art, and so -- so the patent acknowledges that. The droop function is used in a power supply to do, you know, this or that.

Okay. You don't see a reference to "droop function" outside of the Background of the Invention. You see a reference to "droop" or to "drop loss," which, as you heard the other day, that's a broader concept and can have to do with any drop, unintended or intended, in voltage or a spike in voltage, and about the adjustments that are going to be made to get it back to the ideal voltage or to at least within an acceptable range.

So you could have, for example, a microprocessor that's got a voltage regulator that implements a droop function, but it could also have a lot of other circuitry and processors that are designed to -- to optimize voltage regulation in other ways. So the actual output of the voltage can be the result of a number of different operations within a complex microprocessor.

So here you have, you know, some of the references to droop that you find throughout the patent. So this is column 3, and it talks about -- notice it's talking about specific embodiments. It doesn't say that the invention has to have. It hardly ever says it has to have any of these particular things. These are options.

So in another embodiment the adjustable droop amplifier -- so this is talking about an embodiment with a droop amplifier that's not mentioned in Claim 1 -- may be adjusted to compensate for regulator circuit variations.

So, again, what is this adjustment that the droop output is doing, what's its purpose? Well, its purpose doesn't have to be related to the droop function. It can be related to variations in the manufacturing of these chips, where they're all a little different. And if it's a microprocessor, that's not good, because little differences can be a big problem. And so the point of the calibration data that's being used to feed these droop outputs is to make adjustments to compensate among other -- one of the things -- again, optional, "may" -- compensate for regulator circuit variation.

Then notice here in column 3, about line 63: The droop output may be adjusted until the input load voltage meets the load operation specifications, a very broad goal.

I mean, the point of going through these different objectives that you can achieve with a droop output and with the calibration data is that by having a dedicated processor in the calibration control circuit and dedicated data designed for calibration and then outputs designed to make adjustments to the voltage, you can adjust the voltage to achieve a lot of goals. And so it broadly refers to "load operation specifications."

And then, again, a patent drafter's art to help a judge in this situation know whether a particular embodiment has to be incorporated into every claim for some reason is to

say, well, in this embodiment, any number of steps may be omitted or performed in any technical order. And the patent drafter tries to make clear, when it gives these examples, these are just examples. And so what the patent drafter wants the judges to do, if they're reading their claims, is to focus on the claims and not tie them to just particular examples, unless the patent drafter invokes that Section 112(f) provision by saying, for an element, that it's a means for doing this or for doing that.

You know, again, so this is column 5 of the patent, and it refers to calibrating the droop settings, and the power supply may compensate for inaccuracies in the circuit. This calibration provides the power supply with the necessary settings to meet the unique specifications of the load, again, a very broad goal of the droop output, no mention of changing the set point in a droop function or changing the slope of a droop function.

Now, of course, if you have a system that has a droop function, any change -- and yet the system also has other circuitry that is making -- that is optimizing voltage for a variety of reasons -- for example, the chip could be overheating, you want to slow things down -- you're going to have a multiple number of factors that lead into what the final output is. So the droop function would be one, but if you've got a big spike or a droop loss and you're going to

compensate for that, that's going to be affecting the output as well.

And so what this is pointing out is that -- is that the calibration data provides power supply with the necessary settings to power the unique specifications of the load. That is one of the things that the droop output can do is to focus on what are the unique specifications of the load. And the patent talks about different types of load and having a power regulator that can deal with different types of loads and their unique specifications.

And as will be shown -- you know, yes, they're going to point out that Figure 1 has the droop output making an adjustment to the droop amplifier. But look at the language that the specification says regarding that. It says "may," you know, it may do that.

Sorry. There we go.

It says the calibration control circuit may also adjust the droop amplifier via the droop output. And then it gives other examples, that the droop output may then be adjusted until the input load voltage meets the operation specifications. In other words, Claim 1 is very broad.

Now, there can be issues with a very broad claim. One of the issues is if we claimed it too broadly, Intel is going to have prior art, and they're going to have a better chance of invalidating it. Intel has cited -- I think you

were a little vexed by our 14 infringement contentions. They've got like thousands, literally, of invalidity combinations that they have in their invalidity contentions. They've got a lot of prior art. What they're going to end up asserting, we don't know, but it will be something. And that will be for a different day when this Court can test whether a claim this broad is valid. But our point today is that it is very broad.

And it does talk about -- so the adjustable droop amplifier may be used to adjust the drop loss across the current sense circuit. The adjustment of the amplifier may be used to drive an error circuit. So these are some of the examples that are shown in Figure 1.

And then if we get to the --

THE COURT: Could I ask you a question about your construction?

MR. JEFFREY LOVE: Yes.

THE COURT: So I'm having trouble with the way that you are proposing it in that it seems to me that it is missing the word "droop."

In other words, in your construction -- "outputs of the calibration control circuit used to adjust voltage in circuitry in a system that includes a droop function" -- well, that would be any output, right? It seems like you're taking out the word "droop."

MR. JEFFREY LOVE: Well, in two respects --

THE COURT: But am I right? Wouldn't that define any output?

MR. JEFFREY LOVE: No.

THE COURT: Okay.

MR. JEFFREY LOVE: So let me say, in two respects it does not do that.

First off, the droop output is an output from something, and Claim 1 says what. It's an output from a calibration control circuit. So you're limited to -- now, that doesn't need to be part of the construction, because it's expressly in the claims.

THE COURT: But there's more than one output coming out of the control circuit.

MR. JEFFREY LOVE: Right. And what is the other output that the patent talks about? It's a sense output. And what does a sense output do? Well, as was discussed at the tutorial yesterday, it's making an adjustment to the current feedback loop. It's adjusting current, in short.

So, yeah, there's an adjustment to voltage and adjustment to current is the simple way of viewing it.

THE COURT: Were those the only two outputs coming out of the control unit?

MR. JEFFREY LOVE: I believe for Claim 1, yes. I'm going to say yes, and then I'm going to read it real quick to

see if there is some peripheral -- those are the two that are controlling power. And I think those are the only two outputs, because there's two outputs and there's two inputs.

Yes. In Claim 1, those are the only two outputs that are recited. And one is to regulate voltage; the other is to regulate current, and specifically through the current feedback loop. And the dispute with regard to sense outputs is whether it can regulate that current anywhere along the current feedback loop, or Intel wants it more narrowly to be focused on certain circuits within some embodiments.

So when it comes to droop output, it's not anything. It's something from the calibration control circuit that's adjusting voltage. And an adjustment to voltage -- now, first off, the parties agree that when the patent talks about droop, whether it's droop function or droop loss, it goes hand in hand with spike. It's a mirror image. So, yeah, it's an adjustment to voltage up or down.

So what you have in the title and in the rest of the patent is focusing on droop loss, meaning any drop in voltage -- any unwanted drop in voltage, you know, that you're going to make adjustments to try to optimize the voltage. That's exactly what the droop output is.

Now, there are some dependent claims that will make it more narrow, but Claim 1 is not narrow.

So, for example, here in claim -- in column 9, it

refers to compensating for the droop loss. That's a general term. And, again, and then -- sorry. That's column 9. Here's Claim 1. It talks about the droop outputs.

But then you get -- you get more detail as to what the droop outputs are in some of these what are called dependent claims. So Claim 5 is a dependent claim; and it says the circuit of Claim 1, and then it says some more. And what that means, according to that statute I went over, is everything that's said in Claim 1 plus this additional stuff I'm going to mention right now is what's claimed in Claim 5.

And that's where the calibration control circuit adjusts the droop outputs according to the data stored in nonvolatile memory. So it's adding additional limitations there.

And then Claim 7 -- 6 and 7 talk about what kind of data can be stored in nonvolatile memory. And, again, Claim 1 -- now, that's going to be a different claim term that we're going to get to, "calibration data," but it bears on what the droop output is. Because one of the things that the droop output can do is to make adjustments according to the data stored in nonvolatile memory, which can be nonvolatile memory data that stores regulator performance parameters, Claim 6, or application specific power curve data.

For purposes of construing Claim 1, you look to these dependent claims as examples. So you're going, well, gee,

can't that be anything? Well, it can be very broad. Because when you want it narrow, you write a dependent claim that makes it more narrow. That's my point.

And so, for example, Claim 11 says the droop output comprises a digital-to-analog converter with registered input and an amplifier buffer. So that's additional information about what it can be, but that means for Claim 1 it doesn't have to be that.

And there's other claims and -- other claims that refer to droop or droop output, they bear on how it should be construed in Claim 1, because these are all narrower. So the circuit of Claim 18, but if you go to Claim 18, that's a circuit of Claim 1.

So Claim 19 means everything that's in Claim 1, plus what's in Claim 18, where -- and then this has got additional circuitry, and it talks about, you know, controlling the droop output through an external controller or -- and then Claim 26 is the one that got talked about yesterday at the tutorial, because a lot of the circuitry that you see in Claim 1 is first recited in Claim 26.

So here you have the regulator circuit of Claim 1 further comprising, among other things, an adjustable droop amplifier and an error circuit with an error amplifier.

Now, plaintiffs' expert in the briefing says that the droop function is accomplished through the error circuit and

the error amplifier and the droop amplifier. Well, those aren't in Claim 1. The circuitry that plaintiffs' expert says creates the droop function is first introduced in Claim 26.

So that's among the reasons why it's wrong to construe Claim 1, the droop output, as being an adjustment to a droop function, when the circuitry -- because the circuitry that performs the droop function is not recited in Claim 1, Intel's chip doesn't have to have that circuitry. It's first recited in Claim 26, a dependent claim. And we're not asserting Claim 26. We never have.

And so Claim 26 is long, because it's adding all that circuitry, and so part of it is up on column 12. It says the adjustable sense amplifier also feeds into the adjustable droop amplifier. And the droop amplifier, you know, drives the error circuit.

And so then Claim 29, you've got the calibration control circuit adjusting the adjustable droop amplifier via the droop output.

And then 31 is significant, too, because it is -- you know, so 31 is a dependent claim from Claim 26, which depends from Claim 1, so it's basically saying everything in Claim 1 and in Claim 26 plus the following: where said adjustable droop amplifier is adjusted to compensate for regulator circuit variations.

I mean, that's showing that even in the embodiment in

Figure 1 that plaintiffs are referring to, where it has the adjustable droop amplifier and so forth, that the purpose for making the compensation with the droop output, it doesn't have to be to effect the droop function. It can be to compensate for regulator circuit variations, meaning manufacturing variations.

For those reasons, we urge the Court to construe "droop outputs" broadly, in accordance with the plain meaning of the language, with the specification, and in view of the claim differentiation principles that the Federal Circuit has established in cases such as the *Intel* case I just talked about.

That's what I've got on "droop outputs."

THE COURT: Thank you.

MR. SUMMERSGILL: Your Honor, Michael Summersgill on behalf of Intel. May I proceed?

THE COURT: Please.

MR. SUMMERSGILL: Thank you.

Now, Your Honor, we just heard Mr. Love's argument about droop output. Before I get into his arguments on droop output, I want to step back and respond to some of the points he made on claim construction generally and on the parties' different approaches to claim construction, because the parties have taken very different approaches here, and I think it's important.

So if we could pull up slide 1, what has the Federal Circuit told us that's relevant to the disputes we have here? Well, first, in the *Phillips* case, the Federal Circuit has told us that the claim construction process begins with the words of the claims themselves. So we have to start with the words of the claims, and we have to give meaning to each of the words in the claims.

So, for instance, to your question of Mr. Love, we have to give meaning to the word "droop." What does the word "droop" mean? And as I'll get to, we submit that their construction of "droop output" entirely reads out the word "droop."

Second, turning to slide 2, the Federal Circuit tells us that you have to look to the specification. In particular -- and, again, this is the *Phillips* case -- it tells us that claim terms are not read in isolation and must instead be read in light of the specification.

And, Your Honor, that is particularly true where, as here, with some of the terms, the terms are not terms of art. They're terms that are used in a unique way in the patent. So you have to look to the patent, you look to the claims, you look to the specification to determine what those terms mean.

And if we could jump to slide 3, the Court has stated that the specification is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the

single best guide to the meaning of a disputed term.

So when you're trying to figure out what a term means, you look to the claims and you look to the specification. The specification is the single best guide to the meaning of a disputed term.

And if we jump to slide 4, the Federal Circuit also has said you may consider extrinsic evidence. The Court explained -- this is again the *Phillips* case -- that you may look to extrinsic evidence, and it specifically called out inventor testimony as one of the pieces of extrinsic evidence that can be looked to to confirm what's in the claims and in the specification. And there are multiple Federal Circuit cases that have made that point.

And so that's what we've tried to do in proposing our claim constructions. We've started with the language of the claims. We then looked to the specification. And, where appropriate and where relevant, we've then pointed to certain of the inventor testimony.

And we'll get into this. Mr. Love argued repeatedly that we're trying to limit the claims to embodiments. Not so. And I'll address that. We'll each address that. Mr. Zubler and Mr. Hirsch will address that in the context of their terms. I'll address it for the terms I'm arguing. The point is you have to look to the specification to help determine what the terms mean.

Now, the plaintiffs have taken a very different approach. We heard from Mr. Love over and over that the terms are broad, that "droop output" should be broad, all these terms should be broad, Claim 1 is broad. What I didn't hear was what "droop output" really means.

And he said that patent attorneys draft patent claims. That's true. But you can't draft patent claims to cover an invention that the inventor didn't invent, and that's what's going on here. They're trying to cover inventions the inventors didn't invent. And in doing that, they've effectively argued that you should ignore the specification with respect to Claim 1.

And I think what highlights that point is their slide 43 that their expert used yesterday and Mr. Love put on the screen today. They put up Claim 1 of the '944 patent on the left and one of the figures from the patent on the right, and yet they've entirely masked out Figure 1.

Basically what they're saying is, Your Honor, when you interpret Claim 1, you should ignore Figure 1. And that is just wrong as a matter of law. That can't be squared with the statements from *Phillips* that we just reviewed, that the specification is highly relevant, always highly relevant.

Now, the plaintiffs try to overcome all that by pointing to the *Continental Circuits* case, a case that Intel is involved with and that we are very familiar with. I'm not

on the case, but our firm is handling the case. We're very familiar with the case.

Now, Mr. Love spent 10 of his 40 minutes on the *Continental Circuits* case, and I think that is telling, because that case has no bearing here. It's a case that involves different patents, different claims, an entirely different type of claim -- a process claim -- and entirely different issues.

And Mr. Love showed you multiple sections of the *Continental Circuits* case, but I want to show you a piece of it that he didn't show you.

If we could pull up slide 6.

Continental Circuits, just like *Phillips*, says you have to look to the specification to figure out what terms mean. Claims aren't read in isolation. You look to the specification. So what *Continental Circuits* said is the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive.

So *Continental Circuits* didn't overrule or change the many years of Federal Circuit precedent that we just discussed. It didn't change *Phillips*. You can't ignore the specification in construing claim terms; and to do so, we submit, would be legal error.

So with that, let me turn to the term "droop output."

And if we could pull up slide 2, please.

So the term "droop output," it's a requirement in all the claims, because it's in Claim 1, and the rest of the claims are dependent.

Our proposed instruction of the term "droop output" is "outputs of the calibration control circuit used to adjust the droop function; i.e., the function that automatically lowers the output voltage based on the output current."

Plaintiffs', in contrast, are construing the term so that it would be -- it would cover adjustments to voltage in a system that includes a droop function.

Now, it's important to note, while this slide is still on the screen, both parties include droop function in their construction. So both parties agree that a droop function is required.

If we could jump to the next slide, slide 3.

So the the parties' primary dispute regarding the term "droop output" is whether it should be construed as outputs that adjust the droop function or whether it should be construed as any outputs that make any adjustments to voltage merely in a system that includes a droop function, even if those outputs have nothing at all to do with droop. Their system would cover outputs that make adjustments that have nothing at all to do with droop. And we'd submit to you, Your Honor, that that is wrong. And here's why.

So as *Phillips* tells us -- We start with the term

"droop outputs," and that is not a term of art. So as *Phillips* tells us, we have to look to the patent to see how it's used. And, again, we heard from Mr. Love they believe it's a very broad term, but we didn't hear much about what it actually means.

So where do we go to determine that? Well, let's start with the claims. We have that on slide 4. The plain language of the claims indicates that droop outputs are outputs that relate to droop, not just any adjustment to voltage. The claim term itself is "droop outputs," not merely "outputs" or "voltage outputs."

So the term itself tells us that these are outputs that relate to droop. And as I'll discuss when I walk through the specification, all of the references to "droop" in the patent refer to a droop function. And so the claims tell us that a droop output is an output that adjusts a droop function.

So then let me turn to the specification and to slide 5. The specification confirms that the droop output is an output that adjusts a droop function.

Now, I'll ask Mr. Lee -- we've got a slide on the screen, but I think it will be easier if we actually pull up column 1 of the patent.

When you walk through the patent -- and, again, I'm going to try to walk through this relatively slowly.

Hemingway didn't write this patent, unfortunately, so it is pretty dense; and it took me a long time and a lot of explanation from Mr. Rowan before I understood it.

But if you look first at the Background of the Invention, this is column 1 of the patent, and line 36 -- I'll ask Mr. Lee to highlight the sentence beginning at line 36. Here at the top of this paragraph is the first reference to droop function. It says, "The droop function is used in a power supply to automatically lower the output voltage based on the output current." Okay. So that's the first reference to droop function.

Now, Mr. Love said that there are no other references to droop function. Well, that's just not accurate.

Go to the very -- skip one sentence. Go to the next sentence that begins with "The droop." "The droop is set by the manufacturer of a processor."

Now, you don't have to be technical to understand what that's referring to. That antecedent basis is English. "The droop" refers to the droop function. The patent uses the term "droop" as shorthand for the droop function. And how do you know that's correct? Because it goes on to say that that droop is set as a function of the output current. Droop function is something that is set based on output current.

Now, their argument that droop, in the context of this patent, can be something that is just a drop in voltage,

that's -- out in the industry, engineers, as Mr. Rowan pointed out, use the term to refer sometimes to a drop in voltage and sometimes they use it to refer to a droop function. But a simple drop in voltage that can happen on the back end of a voltage regulator, you can't set that. That's not a droop function.

What the patent is talking about here when it uses "droop" is it's referring to a droop function. And how do you know that? Go to the next sentence. The sentence we just read said the droop is set. And then the next sentence says, "Thus, the droop function accuracy is directly related to the current sensing accuracy." So it's just said the droop is the droop function.

And that continues down this column. If you go now to, same column, lines 44 to 46 and -- I'm sorry, line 45: "There are many ways to set the droop." Again, it's referring to the droop function by using the term "droop" as shorthand.

If we jump down to column 1, lines 53 to 55, the patent explains that "Historically, setting the droop accurately has also been a major problem due to inadequacies in current sensing." So "setting the droop," that's referring to the droop function, because you set a droop function.

And how do we know for certain that all of those references to "droop" are referring to a droop function? Because they're all referring to setting the droop based on

current. That's what a droop function is.

So the patent consistently refers to "droop" as shorthand for a droop function. And I'll get to this -- and Mr. Rowan got into it somewhat yesterday -- but the patent also uses terms like "adjust the droop loss" and "droop loss compensation." That's also referring to the droop function. Adjusting the droop loss is what you do with the droop function. You have a droop loss because of fluctuations in current and voltage. That droop loss can send the voltage outside of a processor's specified range.

And Mr. Rowan showed this figure yesterday. It can drop outside the range, and that's a problem. So in a droop function, you adjust the droop loss up so it remains in the range even when you drop in voltage. So the patent consistently, across the board, refers -- uses the term "droop" as shorthand for a droop function.

So then if we turn to slide 6, please, the patent specification then explains that "The present invention addresses the problem of droop inaccuracies." So what does that mean? It means that the invention is designed to address inaccuracies in the droop function.

And how do we know this? We can look at the specific language. It talks about -- that we have on column 6, and this is from -- I'm sorry, slide 6, column 1, line 66, to column 2, line 7. It talks about the fact that circuits

involved in current sensing have positive temperature coefficients, meaning they change with respect to temperature. "The resistance of the circuit increases as the temperature increases. This variation results in erroneous measurements of the current over temperature variations causing further droop inaccuracies."

So, again, a droop function is setting voltage based on current. So if your measurement of current is inaccurate, your droop function will be inaccurate. So this invention, the invention that they set out to claim here, is something that's designed to address inaccuracies in current sensing and inaccuracies in the droop function. And this goes on to say that they're providing a solution to that problem.

And if we jump to slide 7, the solution that they propose is this calibration control circuit "that senses and regulates both a current sensing circuit and the droop in a power regulator over a range of temperatures." Again, "the droop" is shorthand for the droop function.

They concede that voltage feedbacks -- voltage feedback loops were known. If all we were talking -- a voltage feedback loop, you know, senses a drop in voltage and then corrects it. If all we were talking about was a voltage feedback loop, they would have said "correcting for voltage feedback loops"; and even -- even they, I don't think, would have argued that that was new. But this doesn't say that.

This talks about correcting for inaccuracies in the droop.

Now, so if we jump to slide 8, this patent specification then explains how the invention, the alleged invention, accomplishes this. It explains that the calibration control circuit uses the droop outputs to regulate the droop function over a range of temperatures. Specifically -- and we've got this on the screen, slide 8, column 9, lines 25 to 27. It says, "The calibration control circuit controls the adjustments to the droop amplifier via the droop output."

And then the patent explains -- and this is at column 8, lines 64 to 66 -- "This adjustable droop amplifier may be used to adjust the droop loss across the current sense circuit."

Now, again, as Mr. Rowan explained yesterday, adjusting the droop loss refers to the droop function, because that's what you do with the droop function. So the patent explains that the droop amplifier, in conjunction with the error circuit, implements the droop function and that the droop outputs are used to adjust the droop amplifier. Therefore, the droop outputs are used to adjust the droop function.

And, Your Honor, the plaintiffs have made, I think, two important concessions in their briefs that highlight this.

So if we could jump to slide 10, the plaintiffs,

intentionally or not, conceded in their opening brief that the patent does use "droop" as shorthand for droop function.

So at page 6 of their opening brief, the plaintiffs state, "There are many ways to implement and adjust a droop function that can lower output voltage based on output current."

And what the patent actually says in the portion that they cite -- they don't have it here, but it says, "There are many ways to set the droop based on the measured current." So even they are reading the term "the droop" to refer to the droop function.

Second, if we jump to the next slide, which I believe should be slide 11, they concede in their opening brief that the droop amplifier, in conjunction with the error circuit, is what implements the droop function.

They say that right here: "The function of automatically lowering the output voltage based on the output current" --

THE COURT: Slow down.

MR. SUMMERSGILL: Sorry. I apologize.

They say that "The function of automatically lowering the output voltage based on the output current is implemented by the adjustable droop amplifier in conjunction with the error circuit."

So that's saying the adjustable droop amplifier and

the error circuit are what implement the droop function.

So the specification's unequivocal statement that droop outputs are used to adjust the droop amplifier, which even plaintiffs concede implements the droop function, makes clear that droop outputs are used to adjust the droop function.

And, Your Honor, that's consistent with what's in the figures. If we could turn to slide 12, this is Figure 1, the figure that the plaintiffs masked out in their presentation. And what it shows is the calibration control circuit in blue sending a droop output in orange up to the adjustable droop amplifier, which, in conjunction with the error circuit, implements the droop function.

Now, to the extent that there was any confusion about this -- let's turn to slide 14, please -- this interpretation is confirmed by one of the inventors of the patent, one of the -- importantly, one of the non-plaintiff inventors. Named inventor Ali Hejazi testified that the droop outputs are used to adjust the droop function. This is his testimony.

"Question: The droop output is the output that is used to adjust the droop functions; is that right?

"Answer: Yes."

Now, they're trying to run hard from that testimony now, but it's important to note, he's an inventor on the patent. He worked with the inventors at the time they were

allegedly coming up with this technology. And his deposition preparation -- we are were in London with Mr. Love and Mr. Close. His deposition preparation was coordinated by the plaintiffs' lawyers with his lawyers. He was very much an adverse witness to us. He's a friend of the inventors, and yet he still admitted that.

If we jump to slide 15, the Federal Circuit has repeatedly said, in *Phillips* and here in *Voice Techs*, that inventor deposition testimony can be relevant and it can be used to confirm what's in the claims and the specification, and that's exactly how we're using it here.

Now, if we could turn to slide 16 -- so that explains the first part of our construction, that droop outputs are used to adjust the droop function. The second part of our construction is really undisputed. It's the "i.e., the function used to automatically lower the voltage based on output current."

And that comes directly from the specification at column 1, lines 36 to 41, where it explains that the droop function automatically lowers the output voltage based on the output current.

And the plaintiffs don't dispute that. Slide 18 shows their brief. They concede that we've got the droop function right. So we agree on that piece of it.

So we'd submit, based on all that, Your Honor, that

the proper construction of a droop function is "outputs of the calibration control circuit used to adjust the droop function; i.e., the function that automatically lowers the output voltage based on the output current."

I caught myself and I slowed down a little.

Now, Mr. Love made a number of arguments about why they believe our construction is wrong, and they made a number of arguments in their brief, and I want to address some of the main ones.

First, in their brief and, to a certain degree, in Mr. Love's argument, they suggested that we're reading "droop function" into the claims.

Well, if we could pull up slide 22, that argument doesn't make any sense at all. It's inconsistent with their own construction. They include the term "droop function" in their construction as well. They're saying we're reading in "droop function," but their own construction includes the term "droop function."

So we're not reading anything into the claims. What we're doing is what the Federal Circuit has told us to do. The term is "droop outputs." And the question, then, is what a droop output? More specifically, the parties agree that droop outputs make adjustments. So the question is: What adjustments do the droop outputs make? The term itself indicates that they make adjustments related to droop, and the

specification confirms that. So we're not reading anything into the claims. We're just doing what *Phillips* tells us to do, which is look to the patent to figure out what the term means.

Second, they argued in their brief -- and Mr. Love alluded to this -- that our construction would exclude certain embodiments in which droop outputs merely adjust voltage. And we tried to address each of these in our briefs, but I will say this. There is not a single instance in the patent, in the provisional or anywhere else, where a droop output is used to merely adjust voltage. And none of the places of the places they point to shows droop outputs being used to adjust merely voltage.

And there's a reason for that, because outputs used to adjust merely voltage, that's what voltage feedback -- that's what all voltage regulators do. That's the purpose of a voltage regulator.

So let me point to two of the instances in the patent that they pointed to.

So if we could pull up slide 24, please.

So they point to column 5, lines 61 to 63, the portion of the specification that says, "The load voltage and the temperature may be monitored while the droop and sense settings may be adjusted until the load voltage meets the load's specification." They say that somehow suggests that

droop outputs can be used to adjust merely voltage.

Well, it doesn't even refer to droop outputs. It doesn't say that droop outputs can be used to merely adjust voltage. All it says is that the droop and sense settings may be adjusted until the voltage is at the right point.

Well, that's the whole point of making adjustments to a droop function and to the current sense circuitry, because the goal of this voltage regulator is to keep the voltage within a certain range. But it doesn't say anything about droop outputs being used to adjust merely voltage.

A second one they pointed to, if we could jump to slide 26, they rely on a passage at column 9, lines 4 to 5; and I think they inadvertently miscited the patent in this one, and we tried to clarify that in our brief. But they point to this column 9, lines 4 to 5, where the patent states that "Adjusting the droop amplifier may be equivalent to adjusting the reference voltage," and say that that means droop outputs can merely adjust voltage.

Well, again, that doesn't refer to droop outputs, and it doesn't say droop outputs merely adjust voltage. All it says is that by making adjustments to the droop amplifier, you can effectively change the target voltage.

Well, yes, that's the whole point of a droop function, as Mr. Rowan explained yesterday. You adjust the droop amplifier to adjust the droop function so that the

voltage remains in the range. But in a droop function, as Mr. Rowan explained yesterday, you adjust that voltage preemptively so that when the voltage drops, you stay in the range. That's very different from just reacting to a voltage drop after it's happened.

So this passage, like all the other passages, doesn't say that a droop output can be used to merely adjust voltage. It doesn't say anything about droop outputs at all. And I think one thing that's telling is the portions of the specification that tell us what droop outputs are and what they do are portions that they ignored in their opening brief.

Third, Mr. Love argued and the plaintiffs argued in their brief that the patent sometimes uses permissive language. And one of the portions he pointed to -- and if we could pull up -- well, that's all right. One of the portions he pointed to was column 7, lines 23 to 25; and it says, "The calibration control circuit may also adjust the droop amplifier via the droop output."

All that says is that the calibration control circuit may use droop outputs. So we know that droop outputs are required, because they're in Claim 1. Claim 1 specifically recites droop outputs. So the question is: What is a droop output?

This quote that they've pointed to -- and, Mr. Lee, are we able to put up column 7, lines 23 to 25?

Thank you.

He's usually two steps ahead of me.

This doesn't say that a droop output may be something -- may be used to make adjustments other than to the droop function. It doesn't say droop outputs may be used to adjust merely voltage. All it says is that the calibration control circuit may use droop outputs. But, again, the claim specifically requires droop outputs; and so that doesn't help the plaintiffs either.

Fourth, the plaintiffs make an argument based on the doctrine of claim differentiation. Now -- and this argument is just -- it's legally and it's factually wrong with respect to the plaintiffs.

Under the doctrine of claim differentiation, an independent claim generally should not be construed so that it has the same scope as a dependent claim. So, in other words, if you have a limitation, a term in an independent claim, and then that term is limited in a specific way in a dependent claim, you can't properly limit that term in the independent claim so that it would have precisely the same scope as the dependent claim.

It's well-established that claim differentiation does not apply when a construction would not result in an independent claim and a dependent claim having the same scope. And let me walk through this in a little bit of detail,

because I think that will help.

Plaintiffs' argument based on Claim 26 -- and if we could pull up slide 29 -- they argue, based on Claim 26, that because Claim 26 recites some of the specific circuitry discussed in the specification, that Claim 1 can't be limited to a droop output adjusting a droop function.

Well, that's wrong for at least three reasons. One, Claim 26 doesn't even reference a droop output. It does require droop outputs, because it depends on Claim 1, but it doesn't even address droop outputs, let alone add a particular limitation to a droop output.

It's not saying -- if Claim 26 says droop outputs, wherein the droop outputs adjust the droop function, and then we were trying to construe "droop output" as limited to adjusting the droop function, then we'd have a problem. Well, we wouldn't have a problem because we wouldn't be proposing this construction.

But that's not what Claim 26 does. It doesn't say any -- it doesn't even use the term "droop output." It doesn't purport to add any limitation to droop output. Instead, it lists a whole host of other circuitry, like multiphase clock register, multiple phases, multiphase clock register, other things, and it adds an adjustable amplifier, as Mr. Love referenced. But our construction, our proposed construction, a "droop output" is "used to adjust the droop

function," would not render Claim 1 and Claim 26 to have the same scope, not even close, because Claim 26 recites all this other detail. And so as a fundamental matter of patent law and claim differentiation, claim differentiation doesn't apply here.

And, respectfully, the fact that they're making this argument I think shows the extent to which they've had to go to try and justify their construction.

So let me turn to their construction. And if we can put that back up on the screen, slide 34, again, they're proposing that a "droop output" is an output "used to adjust voltage in circuitry, in a system that includes a droop function." And, again, we'd submit that's wrong for three primary reasons.

If we could put slide 35 on the screen, please.

So, first, as I said at the beginning, plaintiffs' construction would read the word "droop" out of the term "droop output." Under their construction, a droop output can be any output to a voltage regulator that makes any adjustment to voltage, even if it has nothing to do with droop.

Now if they had wanted to claim an output that made any adjustment to voltage, they could have claimed an output, they could have claimed an output to the voltage regulator, they could have claimed a voltage output. But they didn't. They claimed a droop output.

And you have to ask, as you did, under their construction, what does the term "droop" mean? If a droop output can be any adjustment to, let's say, a reference voltage that has nothing to do with droop at all, what is "droop" adding to the claim? Nothing.

And as we have on the slide on the screen, slide 35, which shows Claim 1, under their construction the claim would mean the same thing as if you deleted "droop" from the term. And that is a fundamental violation of the rules of claim construction. Every claim term has to have meaning.

Now, they tried to overcome that by arguing that "Well, look, our construction does require it to occur in a system with a droop function." But that is nowhere in the patent, that a droop output is something that's merely in a system with a droop function. And it doesn't make any sense. The claim doesn't say "system with a droop function." It says "droop output." "Droop" modifies "output." So it's an output that relates to droop.

Now, second, their proposed construction -- if we jump to slide 36 -- is inconsistent with the specification. Again, as I walked through earlier, the patent tells us that droop outputs adjust the circuitry that implements the droop function. They essentially just ignored that in their opening brief.

And, third, if we jump to slide 37, I said at the

beginning that what the patent explained as the goal of this invention was to correct for droop inaccuracies. This is slide 37, column 1, starting at line 66, to column 2, line 7.

So the goal of this alleged invention is to correct -- among other things, to correct for droop inaccuracies. And as we discussed, that's referring to inaccuracies with the droop function. But if droop outputs could be any output that has nothing to do with droop, then you're not even addressing the whole purpose of the invention.

So what's really going on here?

If we could pull up slide 38, please.

I think, Your Honor, we'd submit that plaintiffs' statements, including their own experts' statements from earlier in the case, are telling. In their Complaint, plaintiffs originally argued that Intel infringed based on their assertion that Intel's FIVR circuitry uses a droop function.

And this is a quote from their Complaint. They said, "The droop function, also known as load line or active voltage positioning, is used in a voltage regulator to automatically lower the output voltage based on the output current." They say, "Intel implements the droop function in its FIVR products." That's why they said we infringe.

If we turn to slide 39, their expert -- not their expert who is here today, but a different expert, Professor

Melvin, said in his declaration that droop outputs modify the droop function.

So this is on slide 39. It's from his declaration. And he says, "The droop output of the calibration control circuit does not implement this function" -- the function he's referring to in the prior sentence is the droop function -- "but rather modifies the function." That's their own expert's statement in a declaration submitted to the Court.

So then if we could turn to slide 40, then they learned that FIVR -- they learned in discovery that FIVR does not have a droop function, and their tune changed completely. And this side-by-side comparison shows how it changed.

On the left is their Complaint. They say we infringe because "Intel implements the droop function in its FIVR products."

And on the right now is what they say in claim construction: "No embodiment described in the '944 patent implements a droop function by using the calibration data, droop outputs, or sense outputs. Droop outputs merely adjust a voltage or a current feedback loop."

So what's going on? They learned that FIVR doesn't have a droop function, and now they're trying to improperly stretch the claims and read out the term "droop" from the claims in order to make an infringement case.

And, Your Honor, we submit that to adopt their construction would be fundamental error.

Thank you.

THE COURT: Thanks.

Next?

MR. SUMMERSGILL: Your Honor, just to clarify one thing, Mr. Love was going to respond to some of my arguments on droop output.

THE COURT: It's your -- we have four hours. Spend it however you want.

MR. JEFFREY LOVE: Thank you.

First, with respect to the general principles of claim construction that Intel's counsel started with and the importance of the specification, we're in full agreement on that. That the *Phillips* case sets out important principles of claim construction, we fully agree with that. He indicated that there was some disagreement regarding the importance of the specification between the parties. There isn't. It's the same thing I think I said when I started.

Second, with respect to claim differentiation, he points out that -- I mean, claim differentiation is a very important part of the specification in a claim construction analysis. It's critically important. And so he makes this point that, well, Claim 26 doesn't refer to droop outputs. It does refer -- I mean, we cite it for a reason. It refers

to -- that's what adds the circuitry that, according to Intel, performs the droop function.

But look at Claim 29. So his point is, yeah, but Claim 26 doesn't provide the detail that droop output goes to that circuitry that's performing the -- the droop function and makes an adjustment to it. Well, Claim 29 does. That's how claim differentiation works.

And so I'm in agreement with him that Claim 26 doesn't require the droop output to go and make that adjustment to the droop amplifier. But if you look at Claim 29, it says the circuit of Claim 26, where the calibration control circuit interfaces with a regulator by adjusting said adjustable droop amplifier via said droop output, that is critical. And there is no more important, actually, analysis of the specification than that right there.

Second, I can tell you it is hard for anybody listening to these -- to Intel's presentation to be clear, when they're citing to things, of the context of what is being cited. And that comes through whether they're citing to the discussions -- the depositions of the co-inventors in England or to the specification, where they'll say this or that is required. What are they referring to? Because if they're referring to just Figure 1, that's a particular embodiment, not Claim 1, Figure 1, that's got all the elements in all the claims, just about.

And often that's what they're doing. And you just -- and so in our brief, when we're dealing with their briefs, we go through in some detail and point out when they're quoting from one of the co-inventors or they're citing to the specification, and we say, yeah, but that's with respect to a specific embodiment.

And here's a rule of thumb for these patents. So the patent starts with the background and does a summary. Then it's got a detailed description of the invention. That starts on column 4, about halfway down or so. You've got the detailed description of the invention.

And notice what they say about Figure 1: Figure 1 is a schematic of one embodiment of the present invention. Again, that's the claim drafter doing his best to inform you, the Court, or anybody who is reading the patent, that when you look at the discussion of Figure 1 in the specification and you look at Figure 1 itself, keep in mind that's just one embodiment; it's not the only embodiment.

Then you'll see in -- starting at column 4, the detailed description of the invention, first it has a general description, where it's not referring to Figure 1. So if you're a patent lawyer and you want to go through the figure, you keep going until they start referring to the numbers in bold, because that's when you know, all right. Now they're going to talk about Figure 1. And, typically, if you want to

understand something, you want to understand one concrete example first, and then you'll go to the more general principle.

So here in column 8, if you go down column 8, now it's going to start talking about Figure 1. And you'll see that it refers to -- you see these little numbers in bold. So patents -- you know, patents always do that, and that's so that -- now they're going to talk about a specific figure, and the numbers refer you to a point on the figure, whereas before they were more general.

So when I say that there are other embodiments in the invention -- of the invention described in the specification, in general I will be talking about the parts of the patent that aren't specifically referring to Figure 1, because those will have more general statements.

Again, when it refers to Figure 1, it says it's a schematic of one embodiment of the present invention. Again, that's a patent lawyer trying to tell you, don't limit the claims to that.

And then, finally, at the very end -- column 9 is the last column of the specification before the claims -- this is the patent lawyer begging you not to limit the claims to the Figure 1 invention. It says, "Other embodiments of the invention will be apparent to those skilled in the art from the consideration of the specification," and so forth. "It is

intended that the specification and examples be considered as exemplary only of the present invention."

What more can a patent drafter -- there's nothing more a patent drafter can do than those things to tell a Court that when we write Claim 1 broadly, we want it construed broadly. And if they've got the prior art, bring it on, you know. But that's what we intend.

He talked about the -- kind of went off record there a little bit, talking about the Complaint and what's in FIVR and so forth and how the theories of the invention have changed. And they have said several times on the record that their FIVR chip does not implement a droop function.

It is in public documents, so I'm going to talk about it, but I'll give him a little clue here if he wants to object, but Intel publishes, makes publicly available, specifications for external voltage regulators that drive a chip, the FIVR chips included, specific to the FIVR chips, but other chips as well.

And those provide that the droop function is going to be -- is to be provided by the external voltage regulator into the FIVR chip so the FIVR chip doesn't have to do it. The voltage comes into the microprocessor, and it's got that droop function already. And the microprocessor sends a signal to the voltage regulator as well, and so that's part of the system.

So when we say that there has to at least be a droop function in the system, we aren't saying in our claim construction that Intel's chip has to have it to infringe. That's part of the environment in which these claims are written.

So when they say -- and they're correct -- that nothing in Claim 1 says that a droop function has to be part of the system, well, that's right. And, you know, we would be happy to construe it without that.

We were trying to meet them -- to address their point, meet them halfway, that, you know, it is true that the patent starts out basically describing the prior art, which was voltage regulators that are going to implement a droop function; and then it says it's not good enough.

You know, they're trying to solve the problem of droop spikes and drops caused by that particular source of, you know, changes in current, you know, through this droop function. It's not working. That's the background of the invention.

So the environment in which these claims are written are where there's a lot of Intel chips -- I mean, Intel chips and other chips that are implementing this droop function either themselves or through external voltage regulators, and it's not working. And we're going to provide adjustments to that and other related problems having to do with the

circuitry that regulates voltage having manufacturing flaws, manufacturing variations, for one; and, for two, having some temperature dependencies, where it becomes inaccurate, may be accurate at one temperature, but if it gets overheated, it becomes inaccurate; and, three, the patent also talks about trying to optimize -- have a system that has flexibility to make adjustments to voltage for different loads.

So Intel's lawyer pointed to, at the very beginning of the patent -- well, first he pointed to -- let's see.

So, again, he likes to focus on the Background of the Invention. That's the environment that the inventors were working in. It is not -- it's describing what already exists, by and large, the problems with it.

And then when it talks about, though, their invention, it talks about -- so, for example, this is column 1. You know, it says at the very end, "Another phenomenon affecting current sensing circuit is temperature." So it's a number of problems, and one of them is temperature.

It says before that -- oh, yeah, here it is. It talks about processor batch variations. You make 10,000 of them. They're a little different. Little differences can wreck the voltage regulation, and it can do it in a lot of ways, not just on whatever circuitry may be implementing a droop function. But if you've got a droop function, and yet other circuitry that affects the voltage is inaccurate, the

droop function is going to be off.

And, also, if you've got a circuit that has certain load requirements or performance parameters that require a certain voltage, and a voltage that may vary over time, that's one of the things that this patent addresses as well. And for claim differentiation, again, those dependent claims talk about the different -- well, when it's talking about the different types of data that may be in the nonvolatile memory, so to store regulated performance parameters, to store application specific power curve data, it's the data in the nonvolatile memory that's being used by the calibration control circuit for the sense and the droop outputs. There's a wide variety of functions that are done by that.

So at the end of this background, I wanted to point to this part, too: "The present invention provides a cost effective," so forth, "solution to this and other shortcomings of current devices, systems, and methods."

So, yes, the current systems that it was referring to in large part, they did have a droop function in them. But by our claim construction we are not proposing that Intel's chip has to have a droop function implemented on it in order to infringe. And we cite a case that talks about how patent claims can be written with a certain environment in mind and that that's not a claim limitation that the defendant has -- defendant's product has to meet.

I want to address the comments about our expert, who talked about how changes to voltage will modify the droop function if you're in a system that has a droop function.

Just a second here. Here it is.

So here is one example. So this is court document No. 115-5. This is the first declaration that Dr. Steve Melvin submitted with our claim construction -- relating to our claim construction briefing. And I just want to clarify what he's talking about. And he's here in the courtroom if you want to hear from him. I'm happy to call him, and you can ask him questions or I would.

But this is his declaration, where what they said is that the -- first off, again, he's talking, if you'll notice here, about the circuit of Figure 1, not Claim 1. So he says, "The function of automatically lowering the voltage based on --

THE COURT: Slow down.

MR. JEFFREY LOVE: I'll just say that in general, the droop function -- I'll change it, make it simpler -- the droop function is implemented by those two circuits that aren't in Claim 1, okay.

And then it says the droop output of 190, even in Figure 1 -- so Figure 1 essentially, you could say, is showing the circuitry in Claim 26, Claim 29, and others. But even in that full-bodied figure, the best mode, if you will, it does

not implement the function itself, but rather it modifies the function by making an adjustment to the output voltage of the regulator. And the patent also discusses an embodiment for adjusting the reference voltage directly rather than using a droop amplifier.

So the point is, if you've got a system where the voltage includes a droop function, that's going to affect the output voltage, but that needn't be the only thing that affects the output voltage. So if what you want to do is to also optimize the output voltage so that it meets performance parameters, as the patent will talk about, you could have an output -- and that includes an output that goes to the droop amplifier in Figure 1 or in Claim 29 -- that's intended to adjust voltage, perhaps adjust voltage for a turbo mode, for example, where they want just a lot of power and they're going to just take the risk regarding heat and so forth because Photoshop, you know, is in play and that's power intensive. You could adjust the voltage for a lot of reasons, some of the reasons discussed in the patent, and you could do it by making an adjustment to that droop amplifier.

And you have Intel talk about, "Well, no, it's got to be just addressing the droop function." What do they mean? What adjustment to the droop function?

So there's two parts of the droop function, basically, because it says -- it's some ratio of current to

voltage. It's got to start somewhere. So when there is zero current, what's the voltage going to be? That would be like the water tap that's off. There's going to be some pressure, you know, on the water faucet. What is that pressure? That's the set point.

You know, are they really saying that the patent is limited to changing the set point of the droop function? No. They don't get that specific.

And then the other thing that happens is what happens, you know, when the current -- when the faucet is turned on, essentially the current starts flowing at certain levels. How does the voltage change or the water pressure change? If it's going to be a flat -- is it a flat line function? Are they going to change it from a flat line, from a straight function to something that's a little more wavy or complicated? And, if so, are these droop outputs going to be changing that function? You know, what do they mean when they say "adjust the droop function"? They don't talk about that at all.

The fact of the matter is the patent is not limited to either of those things. When it is providing an adjustment to voltage, it is open ended as to what that adjustment could do. And the Claim 1 in particular should be construed accordingly.

So they say we're reading "droop" out of the claims.

Not so. It's just that "droop output" refers to "droop loss," which is any change in voltage. And as they say in a footnote in their brief about droop function, it's defined in the patent as lowering voltage when current raises, but includes the opposite. So it's voltage going up or down. And droop loss is any spike or any drop.

You know what the voltage wants to be; you're just trying to get it there. That the patent says in spades when it talks about how you create the calibration data that's going to be used to generate those droop outputs.

Well, it's reply, so I'll leave it at that, then. And I'll either move on to the next claim, or if you want to hear from Mr. Summersgill --

MR. SUMMERSGILL: Hold on. One, I want to make a couple of brief points; and, second, we're doing the next term.

MR. JEFFREY LOVE: That's true. That's true.

MR. SUMMERSGILL: We at least agree on that.

MR. JEFFREY LOVE: Yes.

MR. SUMMERSGILL: So, Your Honor, four very quick points on "droop output," and then we can move on to the "sense output" term, although I suspect some people in the room might want to take a quick break.

So four quick points. On the external voltage regulator, the point that Mr. Love referenced, Intel doesn't

require -- those are built by other entities. Intel doesn't require those external voltage regulators to have a droop function. And it is other entities, the OEMs, who buy those external voltage regulators, not Intel.

Our point there was simply that when plaintiffs learned that FIVR didn't have a droop function, they changed their tune completely to read "droop" out of the claim.

So, now, three points in response to Mr. Love. One, he referred to their claim differentiation argument on Claim 26, and they added another claim, Claim 29. And he said that Claim 26 adds the circuitry that implements the droop function.

Well, Claim 26 does add certain circuitry that can be used to implement a droop function, but as the patent itself says, there are many ways to implement a droop function. We're not limiting the claims to the particular way of implementing a droop function that are shown in Figure 1 or to the circuitry that's shown in Claim 26.

Then he pointed to Claim 29, but Claim 29 -- that's an argument that they hadn't made before. But Claim 29 doesn't create a claim differentiation issue with respect to droop output because Claim 29 doesn't add the limitation that a droop output adjusts a droop function. So if you adopt our proposed construction, Claim 1 and Claim 26 and Claim 29 all have a different scope. Claim differentiation doesn't apply.

Second point is he argued that we're limiting the claims to the embodiments, and he suggested that we're trying to limit Claim 1 to Figure 1. Not at all. And we're not limiting to particular embodiments.

The Federal Circuit, in the *Curtis Wright* case that we cited in our briefs, was very clear on this point. It said where the term is in the claim itself and you define that term, you're not limiting it to embodiments; you're just looking to the specification to figure out what the term means.

That's what we're doing here. The term "droop output" is in the claim. So the question is: What does that term mean? And the patent and the claims tell us that it is an output that adjusts a droop function.

Again, if the term in the claim were merely an output, and we were trying to limit it to a droop output, we would have a problem. But that's not the case here.

And the final point -- let me pull up slide 35 -- is the Federal Circuit is clear you have to give -- we have to give meaning to every term in the claim. The term here is "droop output," which suggests it's an output related to droop. And under the plaintiffs' construction, that term would have no meaning whatsoever. And that would be a fundamental error in claim construction.

So with that, Your Honor, I'm prepared to turn to

"sense outputs," but wanted to see if --

THE COURT: Yeah. Why don't we go ahead and take our morning break at this time. We'll be in recess for 15 minutes.

Thank you.

MR. SUMMERSGILL: Thank you, Your Honor.

(A recess is then taken.)

THE COURT: Have a seat.

MR. SUMMERSGILL: Your Honor, if I may, just a few things before we get started, but given the time constraints, we've talked to the plaintiffs, and unless there are -- you have concerns with this, we'd suggest that we not argue all of the terms.

And so there are two terms that we've agreed to not argue. Then we're going to change the -- that's the "calibration control circuit" term and then the "interfaces" term, which is the last term. And then we've agreed that we'll move "load voltage input" to the end and only argue that if there is time.

THE COURT: Okay.

MR. SUMMERSGILL: And I just note, not to be too focused on this, but the plaintiffs have used an hour and five and we've just 43 minutes, and we want to have a roughly equal amount of time.

So with that, Your Honor, if it's okay, I'll turn to

the term "sense outputs."

Now, if we could pull up slide 2, Intel submits that the term "sense outputs" are "outputs of the calibration control circuit used to adjust the circuitry that measures current." And the plaintiffs have proposed that "sense outputs" are merely used to adjust any circuitry in the current feedback loop and need not have any effect on circuitry that measures or senses the current. And we'd, again, submit that that proposed construction is improper.

So like the term "droop outputs," the term "sense outputs" doesn't have a commonly understood meaning in the art. And so *Phillips* tells us to look to see how it's used in the patent in order to understand the construction.

So if we turn to slide 3, and starting with the language of the claims, the claim language of the claims -- again, this is Claim 1. The claim language of the claims indicates that sense outputs are outputs that relate to sense circuitry. And the claim repeatedly refers to "sense outputs," not merely "outputs." So the term itself tells us these aren't just generic outputs. These are outputs that relate to sense or sense circuitry.

Second, if we pull up slide 4, if we turn to the specification, the specification confirms that the sense outputs are used to adjust sense circuitry or the circuitry used to measure current.

So on slide 4 -- and this is from column 1, line 66, to column 2, line 4. The patent explains that "prior art voltage regulators were flawed because current sensing circuitry" -- i.e., the circuitry that measures current -- "could not accurately measure current as temperature changes."

What it says is -- and this is in the top box on slide 4 -- "The resistance" -- "Most elements used in current sensing have positive temperature coefficients. The resistance of the circuit increases as the temperature increases. This variation results in erroneous measures of the current."

So what it was explaining is that the problem in the art was that current sense circuitry -- i.e., circuitry that measures current -- has inaccuracies as temperature changes.

And what it says in the next box below, in the same slide -- and this is from the patent abstract -- is that "The present invention addresses that problem," and it does so with "a calibration controller that senses and regulates both a current sensing circuit and then the droop," as we discussed earlier, "over a range of temperatures."

And if we jump to slide 5, the specification then tells us that the purported invention uses sense outputs to do this. And as Mr. Rowan explained in the tutorial yesterday, and as the patent itself states, there are two circuits in the

current feedback loop that are involved in the measurement of current; i.e., two sense circuits. And we have them listed here.

There's the current sense circuit. And the current sense circuit, that is in orange in Figure 1 on the slide. The current sense circuit measures the output current supplied to the load and sends an initial measured signal to the sense amplifier.

The adjustable sense amplifier, the other sense circuit described in the patent, as the patent explained -- and this is at column 8, lines 53 to 54 -- "controls the variances in the current sensing circuit to ensure accurate measurement of current."

So what happens is the current sense circuit measures the current. It sends that signal to the sense amplifier, and the sense amplifier makes adjustments in order to ensure a correct measurement of current.

And then collectively, those two circuits provide the accurate current measurement back to the voltage regulator in the current feedback loop. They provide the accurate measured current signal back to the feedback loop.

So then if we turn to slide 6, the patent then explains that the calibration control circuit uses the sense outputs to adjust the sense amplifier.

And so let me walk through this. So starting at the

top of the slide -- and this is from column 7, lines 13 to 16 -- the patent explains that "the current sense circuit measures the current of the output FETs and feeds back to the register via the adjustable sense amplifier."

"Output FETs" is just referring to the current output from the voltage regulator. So the current sense circuit measures the output current and sends it to the adjustable sense amplifier.

Turning to the next box, column 8, lines 53 to 58, the patent explains that "the adjustable sense amplifier then controls the variances in the current sensing circuit. By adjusting the feedback gain of the adjustable sense amplifier, variations in the current sense circuit of each phase can be balanced."

So what that's saying is that the adjustable sense amplifier then makes adjustments to control or correct for variations in the sense circuit, the inaccuracies in the sense circuit that the patent referenced earlier.

And then turning to the bottom of the slide, column 7, lines 21 to 25, the patent explains that "The calibration control circuits of the present invention may interface with the multiphase regulator by adjusting the sense amplifiers in each phase via the sense outputs."

So the patent explains that the sense outputs are used to adjust the sense amplifier, which in connection with

the current sense circuit, provides the measured current signal.

So the patent is explaining that the sense outputs are used to adjust, as the name would suggest, the sense circuitry, the current sense circuit and the sense amplifier, which is the circuitry that collectively provides the measured current signal to the regulator.

And so that's why we'd submit, Your Honor, that the proper construction of "sense output" is "outputs of the calibration control circuit used to adjust the circuitry that measures current."

"Sensing circuit" and "measuring current" are synonymous, so the sense outputs are used to adjust the sense circuitry; i.e., the circuitry that measures current.

Now, plaintiffs have made a number of arguments about our proposed construction. And let me address the primary one. They argue that Intel's proposed construction would read out the preferred embodiment of the patent shown in Figure 1. And specifically, Your Honor, what they argue is that the sense outputs only adjust the sense amplifier; the sense amplifier doesn't measure current; and, therefore, Intel's proposed construction requiring the sense outputs to adjust circuitry measuring current would exclude the preferred embodiment.

And that, Your Honor, is just simply wrong. And it's

wrong -- and, tellingly, they ignore the specification's express statement that I had up on the screen -- in fact, I still have it up on the screen, thank you to Mr. Lee -- that states that "the sense amplifier controls variances in the current sense circuit."

So our construction, our proposed construction, is consistent with the preferred embodiment. Our construction that says the sense outputs are "used to adjust the circuitry that measures current" is consistent with the preferred embodiment, because the sense amplifier and the current sense circuit are the -- they're the two sense circuits, and they are the two circuits involved in providing a measured current signal to the regulator.

So it's a little bit like Google Maps, Your Honor, like Google Maps measuring how long it will take you to get home from work. First it looks -- you know, one piece of it looks at the distance from, you know, point A to point B. And based on that distance, it calculates a certain time. And then it makes an adjustment based on what time are you going? Are you going at rush hour or are you going at 3:00 in the morning when there's no traffic? And so it corrects that measurement.

This is exactly what's going on here. The current sense circuit measures current, the sense amplifier makes corrections, and then a corrected signal is sent back to the

regulator.

And so by adjusting the sense amplifier -- and the patent is unequivocal that the sense outputs adjust the sense amplifier -- the sense outputs adjust the circuitry that measures the current, that collectively measures the current, and provides the measured current signal to the voltage regulator. And so we'd submit, Your Honor, that our construction is entirely consistent with the preferred embodiment.

Now, let me quickly address why we would submit their proposed construction is wrong. So if we could jump to slide 11, plaintiffs are proposing to construe "sense outputs" to mean "outputs of the calibration control circuit used to adjust the current feedback loop." So they're saying it can be used to make any adjustments to circuitry in that feedback loop, even if it's circuitry that has nothing to do with sense -- with sensing circuitry.

So the first problem with that argument, Your Honor, is that it would read the word "sense" out of the term "sense output."

THE COURT: Hang on just a second on that point, because as I understood it, the sense output is always going to be current.

MR. SUMMERSGILL: Correct, Your Honor.

THE COURT: And so if it's adjusting the current

feedback loop, isn't "current" the same as "sense"?

MR. SUMMERSGILL: Well, "sensing" refers to the measuring. You can sense voltage. You can sense all sorts of things. This is a -- the term in -- the circuit in Figure 1, for instance, is referred to as a "current sense circuit" because it's sensing current. So the term we're focused on "sense." It's a sense output because it measures something, and it measures current.

And there are two sense circuits in the current feedback loop, two circuits described as sense circuits: the current sense circuit and the adjustable sense amplifier.

Now, the plaintiffs concede in their brief -- and I believe it's their reply brief. It's ECF 143 at 10. They concede that only a portion, only one portion of the current feedback loop is involved in measuring or sensing current.

And yet, under their construction, a sense output could be something that makes adjustments to any circuitry in the current feedback loop, even if it has nothing to do with sensing or measuring current.

So if we could pull up slide 12, please, as Mr. Rowan explained yesterday, there are a lot of different circuits in the current feedback loop. And you can see the current feedback loop -- and this is part of what Mr. Rowan explained yesterday. We've shown part of it in yellow. And you can see it starts at the current sense circuit. That measures the

current. Then it goes to the adjustable sense amplifier. That makes the corrections to the measured current signal. And then it goes to the PWM. Then it goes to a host of other circuits.

So under their proposed construction, a sense output could be something that goes to the PWM, the pulse width modulator, even though the pulse width modulator has nothing to do with sensing or measuring current.

Under their construction, an output to the next block could be a sense output, even though it also has nothing to do with sensing or measuring current.

And, in fact, Your Honor, as -- as Mr. Rowan explained yesterday and as Your Honor noted yesterday, the pulse width modulator receives multiple signals. It also receives signals relating to the voltage feedback loop and the droop function.

So under their construction, an output to the PWM relating to the droop function could suddenly also be a sense output, and there would be no distinction between a sense output and a droop output. And we know that can't be the case, because they use different terms to describe different things.

So if we put up slide 13, under their construction, in which a sense output can be any output that adjusts any circuitry in the feedback loop, even circuitry that has

nothing to do with sensing or measuring current, they would read the term "sense" out of the claims, just as in the "droop output" term.

And, again, as *Phillips* tells us, you have to give meaning to every term used in a claim. And their construction would improperly read that term out of the claim.

Your Honor, I'll stop there. And if you have any questions, I'm happy to address them. Otherwise, I'll turn it over to Mr. Love.

THE COURT: Thank you. I don't have any questions.

MR. SUMMERSGILL: Thank you.

MR. JEFFREY LOVE: Your Honor, Mr. James DeRouin, my colleague, is going to argue this one.

THE COURT: Okay.

MR. DeROUIN: Thank you, Your Honor. James DeRouin for plaintiffs.

May I proceed?

THE COURT: Sure.

MR. DeROUIN: So with regard to sense outputs, I think a good place to start is with your question to opposing counsel on whether sense -- whether current gives life to sense in our construction. And you're absolutely right that current does, in fact, give life to the word "sense" in "sense outputs." In a similar way, as voltage and the droop function give life to the word "droop" in "droop outputs," current

gives life to the word "sense" in "sense outputs."

What's happening here is the sense outputs are outputs of the calibration control circuit that are used to adjust current in the feedback loop.

There's much discussion over some of the stated problems addressed by this patent. There's more than just temperature, as opposing counsel would like to lead you to believe. There's also these manufacturing variances. And the sense outputs are designed to make adjustments to overcome these circuit variations. It's not just variations in the current sense circuitry, but it can be other circuitry within the current feedback loop.

With respect to the preferred embodiment argument, it's very clear from opposing counsel's construction of "sense outputs" that they are, in fact, reading the preferred embodiment of Figure 1 out of the claim. Figure 1 shows the sense outputs going to the adjustable sense amplifier. In their brief, they even concede that the adjustable sense amplifier does not, in fact, measure any current.

Taking one quick step back on this, Intel's technology presentation was a little bit difficult to understand because in every one of their feedback loops, they provide an amplifier. When you go back and you compare plaintiffs' tech tutorial with Intel's tutorial, you'll see that when we talk about a voltage feedback loop or a current

feedback loop, there's not necessarily an amplifier in the system. You can measure a current and feed it directly back to the pulse width modulator and accomplish the same goal as you can if you have -- if you measure a current, you amplify that current, and then feed it back.

In a lot of systems you do not need that amplifier. But by placing that amplifier in Intel's tech tutorial, it leads you to believe that you must have that amplifier in order to measure current.

That's just not the case. The current can be measured by the current sense circuit, which is why it's named the "current sense circuit." And it can be amplified by the current sense amplifier, which is one component within many components that make up the current feedback loop.

By proposing construction that says that the current -- that the sense outputs must adjust the circuitry that measures current, it reads out Figure 1, because you don't make any adjustment to circuit element 140, which is the current sense circuit. That's the circuit that measures current.

You apply an offset to that to make up for a number of different things. It can be manufacturing variations. You know, you can make a current sense circuit that just doesn't work properly. You know, you make 100 of these things; each one will be slightly different. And it comes up a lot in this

multiphase regulator because you want each current sense circuit to be the same so that the current that comes out of each phase is equal.

You can also do temperature, where the circuit components, as they get hot, they act differently. But it's not necessarily just the current sense circuit; it could be other components within the feedback loop.

It's also clear that Intel's construction reads out the preferred embodiment, because when you look to dependent Claim 32, it doesn't talk about just adjusting the circuitry that measures current. It makes adjustments that correct for regulator circuit variations. Those variations aren't necessarily just circuitry that measures current, but it also could be other circuitry within that feedback loop.

You asked a question -- and I'll just reiterate briefly -- whether we're reading "sense" out of the claim. We're not. We're adjusting current. That's what the current feedback loop does. We're giving life to sense. Sense is current, and droop is voltage. We're giving life to both of these terms.

With that, I'll leave you with this point. So sense outputs were claimed broadly. We can both agree, the parties can agree that sense outputs adjust current in a feedback loop -- or current feedback loop. That's not disputed. Both our constructions touch on that. Our construction is not

wrong, per se, in their eyes; it's just too broad.

But given the context of the specification, the applicants chose that breadth. And they showed that even by Figure 1, because they didn't adjust circuitry that actually measures current. They adjust a separate amplifier that does nothing but amplify the system, apply a gain, and provide a corrected signal back to the current feedback loop.

With that, unless you have any questions, I will turn it over.

THE COURT: You said something about the defense approach reads out -- and you used -- I think you said 140?

MR. DeROUIN: I'll put it up.

THE COURT: And can you explain that to me further, please? I don't have that circuitry in my head as well you do.

MR. DeROUIN: Yes.

Is this thing turned on? Can we turn it on?

Thank you. I apologize.

THE COURT: I see 140.

MR. DeROUIN: Anyway, 140 is here (indicating). This is the current sense circuit. They call it the current sense circuit.

From the calibration control circuit down here at the bottom left -- this is 190 -- you follow the sense output out to circuit element 150. That's the adjustable sense

amplifier.

As you can see, this adjustment adjusts the amplifier. It does not adjust the current sense circuit. The current sense circuit remains the same.

Hypothetically, let's say the current sense circuit improperly measures current. Adjusting this amplifier will do nothing to correct that in that circuitry. That circuitry will continue to give a bad number.

What we do here is we place an amplifier that's adjustable within the current feedback loop. We place it in the current feedback loop to correct for the bad measurement of current in that loop.

You could make that correction by adjusting 140 itself. That's one way you could do it. You'd have an adjustable resistor. You could make a value -- you can just correct it here. You correct it at the source.

What the preferred embodiment shows is you place an amplifier within the feedback loop to correct the value that comes out of current sense circuit. So it measures the current here (indicating). It feeds it back. You intercept it by the amplifier. You apply a gain. And then that's fed back to the pulse width modulator.

If you wanted to, you could do it even a third way. You could adjust the pulse width modulator to account for a bad signal coming in. There's a number of ways you could do

it.

My point on them reading out the preferred embodiment is that -- and I quote -- "sense outputs," their position is that it "adjusts the circuitry that measures current."

Current sense circuitry is right here (indicating). It measures the current. Figure 1 does not adjust that circuitry. It adjusts different circuitry you place in there in order to adjust the current feedback loop as a whole.

Does that answer your question, Your Honor?

THE COURT: Yes. Thank you.

MR. DeROUIN: Anything else I can clear up for Your Honor?

THE COURT: No. Thank you.

MR. DeROUIN: Thank you for your time.

MR. SUMMERSGILL: Your Honor, three quick points on "sense output."

Actually, if we could pull up slide 5 to start with.

So, first, Mr. Geringer argued that our construction would read out the preferred embodiment. And, again, let me explain why that is not right.

So the current sense circuit measures current. And the sense amplifier then -- as the quote on the bottom of slide 5 explains -- controls the variances in the current sensing circuit. In other words, it makes adjustments to the measured current signal so that you have an accurate measured

current signal that is sent back to the voltage regulator.

So, again, it's a little bit like Google Maps. If Google Maps just determined the time it will take you to get home from work by looking at the distance and didn't take into account the traffic, it would send you an inaccurate measurement of the time to get home from work. Instead, it makes an adjustment to that measurement so that you have a correct measurement of the time it takes to get home from work.

That's what the adjustable sense amplifier does in this -- in this patent. It makes a correction to the measured current signal so that you have an accurate measured current signal regardless of the temperature, and then it provides that signal back to the regulator.

There's a reason that both the current sense circuit and the adjustable sense amplifier are referred to in the patent as sense circuits, because they're both involved in sensing or measuring the current.

And so when the sense output makes an adjustment to the sense amplifier, it is making an adjustment to the circuitry that measures current, to the circuitry that provides the measured current signal back to the regulator.

Now, does the -- look, does the sense amplifier on its own measure current? No. But it's involved in measuring the current because it's making an adjustment to that measured

current signal so that you have an accurate measurement.

Another analogy would be like a digital thermometer that you use to take someone's temperature. There are sensors in there that actually sense the actual temperature, and then there's circuitry that converts that into a readable format and puts it up onto the screen so that you can read it. Everyone would agree that a digital thermometer measures temperature.

The same thing is involved here. The two sense circuits -- i.e., you could call them measuring circuits; "sense" refers to measuring -- are involved in measuring current. So our construction is not reading out the preferred embodiment at all.

Second, Mr. Geringer referred to Claim 32 and argued claim differentiation. I'll note this is not an argument they've made before, but again --

THE COURT: Let me interrupt you --

MR. SUMMERSGILL: Yes.

THE COURT: -- and kind of, I think, raise the point that the plaintiffs are raising, and that is that your construction which says "outputs of the calibration control circuit used to adjust the circuitry that measures current" is -- I think what their point is is that the current sense circuit is not something that adjusts the circuitry that measures current. They, I think, concede that the adjustable

sense amplifier performs that function, but not that the current sense circuit performs that function.

MR. SUMMERSGILL: Right. The current --

THE COURT: And so -- and perhaps what you're telling me is that those two things together are a circuit. I don't know. I'm having trouble kind of following what your suggestion is and why they're wrong on that particular point.

MR. SUMMERSGILL: Fair enough, Your Honor. Let me try and address that.

We're not saying that that's one circuit. What we're saying is they are collectively the circuitry that measures the current. So our proposed construction is "outputs of the calibration control circuit used to adjust the circuitry that measures current."

And what we're saying is that collectively the current sense circuit and the sense amplifier are the circuitry -- exactly, the circuitry that measures current. Because if you just use the current sense circuit and you don't make the corrections, you then have an incorrect measurement, and that doesn't do anyone any good.

If you used a digital thermometer to take your child's -- if I used a digital thermometer to take one of my daughters' temperatures and it showed a reading of 101 and her temperature was really 99, that wouldn't do me much good.

And so in order to correctly measure the current, you

need both of these circuits.

THE COURT: And I think what they were doing is they were pointing to -- and they actually did -- the calibration control circuit and the arrow that comes out and then only goes to the adjustable sense amplifier, and I think pointing to that and saying it doesn't -- it doesn't do what your construction is saying as regards the current sense circuit.

MR. SUMMERSGILL: Yes, that is exactly what they're arguing.

THE COURT: And, again, what you're suggesting is, well, you have to look at the entire thing as a -- as a circuit. You're defining the whole thing in more broad terms, even though it looks like that might be a completely self-contained circuit there, No. 140 there. I think it's 140. I can't see very well.

MR. SUMMERSGILL: I think -- I can't see it very well in that version either.

Thank you.

So the current sense circuit is 140. The adjustable sense amplifier is 150.

THE COURT: Okay. I think I understand your argument, unless I said it incorrectly.

MR. SUMMERSGILL: And let me just make sure I've said it clearly enough, which is we agree completely, and the patent is clear that the sense outputs are used -- are sent to

the adjustable sense amplifier. So they adjust the sense amplifier. But it's the sense amplifier that receives the measured current signal from the current sense circuit and then makes adjustments to ensure an accurate measurement of current.

So what we're saying is that collectively the current sense circuit and the adjustable sense amplifier are involved in measuring the current. And the sense output is the thing that is used to make adjustments to that circuitry.

It's no mistake, Your Honor, that the term is a "sense output," and then there are two sense circuits described in the patent: the current sense circuit and the adjustable sense amplifier.

And so let me close, Your Honor, by -- well, let me quickly address the claim differentiation argument they made, if we pull up Claim 32. They hadn't made that before. There is no claim differentiation with Claim 32, no claim differentiation with Claim 32. Claim 32 doesn't even reference sense outputs, and it doesn't add a limitation to the term "sense output" that would have it adjusting circuitry used to measure current.

So Claim 1 and Claim 32 would not have an identical scope if you adopt our construction. There's just no basis for the claim differentiation argument.

So then let me close by -- let me pull up slide 12.

The problem with their argument and their construction is that they are saying a sense output can be an output that makes adjustments to any circuitry in the voltage feedback loop. So remember we talked about the pulse width modulator, which maybe Mr. Lee can make this larger. It's 160 on the left, I believe.

That circuit, the pulse width modulator, has nothing to do with sense circuitry. It doesn't sense current. It doesn't sense anything. That's the thing that is making adjustments within the regulator so that you get the right amount of voltage.

And so under their construction, a sense output could be an output that goes to the pulse width modulator that has nothing to do with sensing, nothing to do with sense.

And if we could jump to slide 13, if that's the construction, what does the term "sense" add to the claim? If a sense output can be any output that adjusts any circuitry in a current feedback loop, even if it's got nothing to do with sensing, what does the term "sense" add to the claim? Nothing. They're reading the term "sense" out of the claim, and that is improper.

Thank you, Your Honor.

THE COURT: Thank you.

Anything else?

MR. DeROUIN: May I make one quick point?

THE COURT: Of course.

MR. DeROUIN: Opposing counsel makes the point that -- they draw a box around the current sense circuit and the adjustable sense amplifier, calling that collectively the circuitry that measures current.

But as we've talked about, Claim 1 is broader. It talks about making adjustments for different circuit variations. One of those -- with that breadth, you could correct for the bad current in the pulse width modulator, drawing a bigger box.

So what opposing counsel is really saying is they're drawing an arbitrary box around two components to make their point. It supports their argument. But if you make that adjustment in the pulse width modulator, that box gets bigger. If you make it in the bridge, that box gets bigger. You can draw that box around any components and say, well, those are the components that measure current.

That's just not the case. The component that measures current is the current sense circuit. That's the only -- that's the only component that measures current. If you start drawing the box bigger and bigger, we get into problems; and that's the problem with the rationale that opposing counsel is taking. They just choose two components, where the patent has breadth to adjust other components that don't actually measure current.

That's it.

THE COURT: Thanks.

MR. SUMMERSGILL: Your Honor, just very quickly on that, our box is not arbitrary at all. What we're talking about is the term "sense outputs," and we draw a box around the two sense circuits: current sense circuit, adjustable sense amplifier.

We've drawn the box around the sense circuits, which is consistent with the term "sense output." They've drawn the box around the entire current -- the entire current feedback loop, which would include circuitry that has nothing to do with sensing. Their box is arbitrary. Ours is very specific and directed to the term at issue: "sense output."

THE COURT: Thank you.

Next?

MR. JEFFREY LOVE: Thank you, Your Honor. The next term is "calibration data."

Also, I wanted to just clarify one thing. It was Mr. James DeRouin who was arguing for plaintiff in the last claim term. There was a reference to Jim Geringer, who is also one of our colleagues on this case, but he's over there in the corner.

MR. SUMMERSGILL: I apologize.

MR. DeROUIN: I take no offense.

MR. JEFFREY LOVE: So, first, let me start by

pointing out the difference between the two claim constructions. The main difference is that in defendant's construction, they want to tie calibration data to temperature.

So here is the chart we submitted to the Court with the various claim terms. So for calibration data, what they add is "data that relates" -- well, the sense and droop outputs, with temperature, and is used to adjust those outputs as the temperature varies. So calibration data is then going to be limited to temperature-dependent data.

And our position is that that's too broad, that temperature should not be a requirement of Claim 1 or just of the term "calibration data," that the patent in many places uses "calibration data" more broadly.

And I'll start with, again, what I think is the most pertinent portion of the patent, which is the dependent claim that does say that you're going to have temperature tied to the droop and the sense output data.

Let's see here. So if you look at -- so these are the claims. Let's see if it will focus. It's a little hard to read.

Is there a focus button?

Thank you. I appreciate it.

So if you look at Claim 9, it says the circuit of Claim 1 -- meaning everything in Claim 1 -- where the

nonvolatile memory stores data for droop outputs and sense outputs where the data is based on the load voltage input and the temperature input. So that's where they add temperature. They make it a requirement for at least some of the calibration data.

Now, if you look at another, Claims 6 and 7, it talks about the nonvolatile memory storing regulator performance parameters -- so that doesn't have to be temperature dependent -- or storing application-specific power curve data.

So the notion is "calibration data" throughout the patent is used broadly to address many different types of calibration data, to encompass it, anyway.

Let me give an example from -- you haven't heard much about the provisional application, but I want to show you a page now from the provisional application. So this is in the record as document 144-1. And the provisional application has got a number of embodiments, starting basically -- it's got a number of additional figures, so starting at Figure 7 through Figure 13. None of those have a temperature input, Figures 7 through 13.

And what this says -- and this is page 5 of the provisional application. And it talks about adding, you know, a droop output. So in Figure 7 -- Figure 13, rather, they add a droop circuit.

And then, you know, it talks about creating

calibration data for the droop circuit. That calibration data is not tied to temperature.

And then it says Figure 14 is the same as Figure 13, except that a temperature sensor and calibration circuit has been added, and the temperature sensor through an amplifier is used to do the various things. So you get that added only in one of the last figures in the provisional.

And this point is made by our expert, who submitted a couple declarations on this issue. And so on this particular point, I would direct the Court to, for example, Dr. Melvin's declaration, which is document 115-5, where he says -- well, I'll just put it on the screen.

So in paragraph 29 he said that the patent discloses calibration data, and then in some embodiments disclosed in, for example, the provisional application -- that's the 105 application -- only droop outputs are adjusted based on temperature. So those are the pages I just referred to in the provisional application.

And, similarly, if you go through the patent, you're going to see a number of references to calibration data being created based on temperature; and you'll see the word "may" used with them. That's the point that it's optional.

And you also see the patent talking about problems that aren't related to temperature, as we've mentioned many times. They're related, for example, to just manufacturing

flaws. You make 10,000 of them. There's little differences. How are you going to deal with those differences? That's not a temperature problem. You don't solve that problem by creating temperature-based calibration data.

And so this is column 1 of the patent, talking about the problems. And as it does so, it talks about -- that there is a high degree of variation due to changing environmental conditions and over production lot variations. It's the production lot variations. They just, you know, make them slightly different, so you're going to have calibration data for that. And similarly, line 55, they talk about processor batch variations.

And so, you know, when it talks about the calibration data in column 2, it will talk about, again, regulator performance parameters and power curve data being stored in the nonvolatile memory. And then it says the data stored in the nonvolatile memory for the outputs may be based on the temperature input. So, again, it's "may." And if you go through the patent as a whole, you will find that it never says the temperature always has to be used.

So this is column 6, for example. It says the outputs may be based on the temperature input. And that's after it talks about the nonvolatile memory storing regulated performance parameters and application-specific power curve data. So the calibration data is broader than that.

Here is columns 7 and 8, really the same points. You know, the invention may sample the temperature input, may create data that relates to temperature with the output stored in the nonvolatile -- data stored in nonvolatile memory. Again, any number of the steps may be omitted. It says the methods may be repeated over a range of anticipated operating temperatures.

So -- and then over here in column 8, it talks about the adjustable sense amplifier may be adjusted by adjusting the feedback gain and so forth, to balance or equalize the load seen by each phase of the multiphase regulator. But it doesn't say that temperature has to be used, you know, in making those adjustments. And, again, it goes back to the provisional, which has the embodiments in Figures 7 through 13 are making adjustments to the sensing, but they're not temperature based. They're just designed to deal with manufacturing variations.

That, in a nutshell, is our argument.

THE COURT: Thank you.

MR. JEFFREY LOVE: Thank you.

MR. HIRSCH: Good morning, Your Honor. Jordan Hirsch for Intel.

Your Honor, I just want to respond right out of the box to a couple of things that Mr. Love just said. He mentioned Claim 9. Claim 9 doesn't use the words "calibration

data." He mentioned the provisional. Your Honor can look through the provisional front to back; never mentions the phrase "calibration data." He referred to manufacturing variations and lot variations. The patent never uses the phrase "calibration data" to refer to manufacturing or lot variations.

And, as I'll explain, each and every time the patent uses the specific phrase at issue, "calibration data," it does so in the context of temperature, throughout every instance in which the phrase is used in the specification.

Taking a step back, Your Honor, I agree with Mr. Love that the dispute, to crystallize it for Your Honor, is whether calibration data has a connection with temperature. Our construction, Intel's construction, is that calibration data is data that relates the sense and droop outputs that we discussed this morning, with temperature, and is used to adjust those outputs as the temperature varies.

The plaintiffs' construction is that calibration data is simply data that's used in determining the droop and sense output settings based in part on operating a circuit under known conditions, without any connection with temperature.

In other words, what the dispute comes down to is whether the calibration data relates those sense and droop outputs with temperature or whether calibration data can be any data that's used to determine the outputs without any

connection with temperature.

Now, this dispute comes up, to put it into some context, from the plaintiffs' infringement contentions. They've accused data in Intel's products that has no connection with temperature of being calibration data. Our position is, look, that's a -- that's a stretch. That's an attempt to create an infringement read and stretch that specific term, "calibration data," beyond what the patentee said in the patent it means.

The term "calibration data" can be used in many different contexts and can have different meanings. It may be a term that Your Honor has heard in passing in other contexts.

We looked, for example, on Google. We typed in "calibration data." And there are many different examples of what calibration can be in different situations. For example, smartphone companies use the term "calibration data" on their websites to refer to data that's specific to tracking your steps as you move throughout the day.

We found an acoustic software manufacturer that uses the term "calibration data" to refer to data that's specific to acoustical information, or acoustic information, pardon me.

We found a facility that tracks electromagnetic or measures electromagnetic radiation and they use the term "calibration data" to refer to data that's specific to electromagnetic radiation.

So we submit that our job is to determine how the '944 patent uses this specific phrase, "calibration data." And *Phillips* tells us to do that, we've got to go to the claims and we've got to go to the specification. And we submit that when we do that, the claims, the specification, even inventor testimony, makes clear that when the patentee used this specific phrase -- not other terms that are in Claim 9, not other terms that are in the provisional, but when they use the phrase "calibration data," they did so to refer to data that has this relationship with temperature.

To understand how the term is used, I think it's helpful to go back to what the patent refers to as the problem it's purporting to solve. If we look at column 1, line 66, to column 2, line 4, the patent explains that a problem in the prior art is inaccuracies due to temperature variations. As temperature changed, current sensing measurements became inaccurate and droop function became inaccurate.

The inventor testimony that we cited in our briefs confirms that. We asked Mr. Hejazi, in the patent it states that "in the prior art. . .changes in temperature could result in inaccuracy in the droop function." He says, "Yes."

And we asked him, "What the '944 patent describes is a purported solution" to that problem, to the problem of "prior art regulators that could not regulate droop over temperature?"

"Answer: Yes."

And the patent explains that it uses calibration data to overcome this problem.

This is Claim 1, the only independent claim, as Your Honor has heard. And Claim 1 specifically connects calibration data with temperature. In fact, the only calibration referenced in Claim 1 is calibration for temperature. The claim first refers to receiving temperature data. Then that temperature data is used to adjust -- meaning calibrate -- the sense outputs and the droop outputs. And, finally, the last limitation refers to using temperature to calibrate the calibration data.

So the only calibration in the claim is temperature calibration. And that makes sense. If the problem you're trying to solve is an inability to change as temperature changes, it makes sense that your solution is to calibrate for temperature. But it also directly supports our construction. If the only calibration in the claim is temperature calibration, it follows that calibration data ought to relate to temperature.

But there's another reason why the claims support our construction and show that it is correct; and that's because only by construing "calibration data" to have a connection to, to relate to temperature, does the operation of Claim 1 make any sense.

The claim first refers to memory that stores calibration data. So under our construction, that's the data that relates the sense and droop outputs with temperature and is used to adjust those outputs as temperature changes. Temperature data is then received.

And temperature data is just the measure of temperature. As Mr. Rowan mentioned yesterday, maybe it's 52 degrees Celsius. It's just a temperature number. The claims then refer, again, to using temperature data to adjust the outputs.

Now, if you just have a number, an input that says 52 degrees Celsius, that doesn't tell the circuit what to do. What do I do to my sense outputs, given that it's 52 degrees? What do I do to my droop outputs, given that it's 52 degrees? The temperature data alone doesn't tell you. But we have the calibration data stored in the memory. That's the data that tells you, okay, 52 degrees. Make your sense outputs 7. Make your droop outputs 6. The claim makes sense.

Under plaintiffs' construction, if calibration data can be data that has no relationship at all with temperature, it falls apart. Then we have data in memory, calibration data, that has nothing to do with temperature, doesn't tell you what to do with your outputs depending on temperature. Then when temperature comes in, when you get that 52 degrees, you've got no way to know how to adjust your outputs. You've

got no data saying, okay, 52 degrees, make your sense output 6, make your droop output 7.

But we don't need to stop at the claims, because the specification, as I mentioned, also directly, repeatedly supports our construction.

This is from column 3. What I put on the screen, slide 9, is column 3, line 54. This is in the Summary of the Invention section of the patent. And the passage starts with "The present invention." So it's talking about the invention. And in the highlighted portion that I've shown on the screen, it explains that in the present invention, we're going to create data that relates temperature with the sense outputs and the droop outputs. Again, that makes sense. That's the point of the invention. The specification then repeatedly, again and again -- and I submit to Your Honor, without fail -- refers to that data as "calibration data."

Column 5, line 31, again refers to "This invention," not an embodiment, not an example: "This is our invention." And it states that it calibrates "droop and sense settings over various temperatures" and then refers to that as "this calibration data."

The specification goes on, Your Honor, to mention the term "calibration data" seven additional times -- that's it -- and each and every time, seven times, without fail, connects calibration data with temperature.

Column 2, line 21, from the Summary of the Invention, refers to calibration control circuit interfacing with temperature to calibrate calibration data, connecting temperature with calibration data.

Column 2, line 40, again from the Summary of the Invention section, refers to data based on temperature and then refers to that as "calibration data" in the next sentence.

Column 4, line 29, again from the Summary of the Invention section, refers to calibration data as having a relationship with temperature.

It goes on in the detailed description of the patent in four other instances, the specification refers to "calibration data," each and every time connects it with temperature.

Column 5, line 18, refers to "temperature-independent droop settings," which the parties agree means droop settings that are adjusted for temperature. It refers to it as "calibration data."

Column 6, line 20, refers to the calibration control circuit interfacing with temperature to calibrate calibration data.

Column 6, line 37, refers to data based on temperature and then refers to it as "calibration data."

And finally, column 8, line 24, refers to calibration

data that is associated with temperature.

Now, counsel made the point that sometimes the specification uses the word "may." That's true. At other times it doesn't.

For example, column 3, line 54; column 5, line 18; column 5, line 31; column 2, line 22; column 6, line 20, are all examples of references to "calibration data" without the "may." And the claims don't use "may." The only -- the only reference to calibration data in the claims is connected with temperature.

But there's even more. We asked Mr. Hejazi, one of the named inventors, "Calibration data is the data that relates temperature with the sense outputs and temperature with the droop outputs; is that right?"

His answer, unequivocal: "Yes, it relates to temperature. And that's the point."

So at bottom, what we have are the words that the patentee chose. They had the power of the pen. If they wanted "calibration data" to mean any old data used to determine sense and droop outputs with no connection to temperature, they could have said so. They could have said so in the claims. They could have said in the Summary of the Invention. They could have said so in the detailed description, and they never did. Instead, they did the opposite.

The only calibration in the claims relates to temperature. Each and every time the phrase "calibration data" is used in the specification, in the Summary of the Invention, in the detailed description, it relates to temperature.

And I submit to you, Your Honor, that the public ought to be able to rely on that. Someone picking up this patent, reading it to figure out, all right. I know what "calibration data" means when it's on the smartphone website. I know what "calibration data" means for the acoustic software manufacturer. What does it mean in this patent?

They ought to be able to rely on what the claims say. They ought to be able to rely on how each and every time the patentee used the term in the specification.

The Federal Circuit agrees. Again and again the Federal Circuit has said, when the patentee uses a term consistently, repeatedly, and exclusively to refer to something, well, then that ought to be how we construe it.

I direct Your Honor's attention to the *Arista Networks* case. It's a Federal Circuit case from 2018, 908 F.3d 792. In this case, the Federal Circuit was dealing with technology that related to network device security. And the patent talked about broadcasting changes to device configurations. When you have a device that's hooked up to a network and the configurations change, I'm going to broadcast

those changes to make sure there's no security issue.

And the Federal Circuit said, We're going to construe the term "broadcast" to require multicasting, broadcasting to multiple recipients. Multicasting wasn't in the claims. But the Federal Circuit said, Look, the specification consistently explains that that's what they meant. That's what broadcasting here is. And, in fact, that's the only example of what broadcasting means. So even if you don't have an explicit definition, when you consistently, when you exclusively refer to a term as having a particular meaning, that ought to be how it is construed.

Another example for Your Honor's reference is the *Rembrandt* case from 2017 in the Federal Circuit, 716 F.App'x 965 where the Federal Circuit said, We're going to construe the claims to require automatic recovery of a computer system. The claims didn't mention "automatic." But when that -- when the patentee describes a feature in the Summary of the Invention, in the detailed description, when the patentee says, "This is what the present invention is," that ought to be how the term is construed.

Let me briefly refer -- respond, rather, to the arguments that the plaintiffs have made in their -- in their papers and today.

Mr. Love pointed to the claim language and specifically Claim 9 and appeared to be making a claim

differentiation argument. And, again, for context here, claim differentiation would apply if under our construction Claim 9 had the same exact scope as Claim 1; and that simply isn't true.

As an initial matter, Claim 9 doesn't refer to "calibration data" at all. It talks about data for said droop outputs and said sense outputs. They could have referred to "said calibration data," which was mentioned in Claim 1, but they didn't. They referred to data for sense outputs and droop outputs.

In addition to that, Claim 9 has additional limitations not in Claim 1, independent of what "calibration data" means, because it refers to data for sense and droop outputs that relates to temperature and the load voltage input, an additional limitation, which again precludes the application of claim differentiation here.

Furthermore, Claim 9 is actually consistent with our construction. Claim 1 makes clear that the calibration data relates temperature to sense and droop outputs, adjusts the sense and droop outputs as temperature varies. Claim 9 then says now, after we've done that, after the calibration data has made those adjustments, now the data for the droop and sense outputs, now that data also relates to temperature. Claim 9 in no way suggests that calibration data in Claim 1 can be disconnected entirely to temperature.

Finally, in their papers, the plaintiffs referred to some of the claims, the originally filed claims -- 47, 49, and 64 -- and made a claim differentiation argument. And I submit that that argument fails for the same reasons. Claims 47, 49 don't even mention the term "calibration data." Each of the originally filed claims that they referred to includes limitations well beyond what is in Claim 1. And, even further, none of these claims issued in the '944 patent, so they could not possibly show that there's any dependent claim issued in the patent that has the same scope as Claim 1 under our construction.

Finally, a brief word on plaintiffs' construction. As I mentioned, their construction would have "calibration data" as any data used to determine the droop and sense outputs, even if it has no connection with temperature. In their papers they tried to find an embodiment where calibration data is disconnected to temperature to support their construction, and I submit they fail to do so.

They point to Claims 6, 7, 31, and 32 in their papers. None of these claims mentions calibration data, let alone suggests that calibration data can have no relationship to temperature.

They refer in their papers to citations from column 5, line 56; column 5, line 25; column 7, line 38. None of these citations refer to the phrase "calibration data," let

alone suggests that calibration data can be any type of data used to determine the sense and droop outputs.

And, finally, they refer to the provisional application to try to support their construction. But as I mentioned, the provisional application does not use the phrase "calibration data" a single time.

In conclusion, Your Honor, we submit that "calibration data" ought to be construed as the Federal Circuit has instructed us, consistent with the claims, consistent with the specification, consistent with the understanding of the named inventor. It ought to be construed as the claims say, the specification says, the inventor himself said, to have a connection with temperature.

Thank you.

THE COURT: Thank you.

MR. JEFFREY LOVE: All right. I've been challenged. Let's see if I'm up to the task.

First off, the parties' proposed constructions for "calibration data" is data that relates to the sense and the droop outputs. You know, this is Intel's construction, and ours is essentially the same. So for them to say that Claim 9, which talks about the data stored in nonvolatile memory for the sense and droop outputs, that that's not calibration data, that's inconsistent with the parties' -- the portions of the agreed construction of "calibration data," you

know, as to that part.

Second, they talk about the provisional -- here it is -- application, and so I want to -- that nowhere does it use the term "calibration data."

All right. So this is page 5 of the provisional application, document 144-1 in the Court's system: Once all the phases are calibrated, then the circuit will use the calibration information at power up to re-adjust itself for accuracy. I submit to the Court that is essentially a reference to calibration data.

Page 4, that is the preceding part of that paragraph, talks about creating the calibration data. It doesn't use temperature. The provisional first starts out with creating calibration data that's going to match the current among the various phases.

If you'll recall the analogy during the tutorial of a track meet, where you have the runners hand off the baton as you're going around the lap so that they don't all have to run the entire way, so if you have a multiphase regulator, those are called different phases. But what can happen is, you know, some -- if the phases are out of balance, then some phases aren't doing their fair share of the work. So this notion of balancing the power among the phases is an issue that the patent, the invention addresses. And here you have a description in the provisional application about how you go

ahead and create calibration data for that.

So when in calibration, only one phase will be active at a time, and then you force the entire load current to go through the active phase and you use a known load, so you know what the load is supposed to be, and a known reference. And then the calibration circuit uses that information, and basically you see if it's inaccurate. And if it's inaccurate, the counter counts up and down, changing the gain by small steps, essentially, until it becomes accurate.

And then you've got your gain adjustment coefficient. You're not using temperature for that. You're just dealing with a manufacturing inaccuracy.

And after you do that, that is data that's then recorded in nonvolatile memory. It's calibration information. It's calibration data. It's not using temperature.

While that's one paragraph in the provisional, the provisional -- you know, it starts with Figure 7, and it goes, as I mentioned previously, all the way through -- through Figure 13, without even having a temperature input or temperature sensor in the figure. And then in Figure 14, they add the temperature sensor. That's another embodiment.

Now, it's true that the patent, as I conceded earlier, it does emphasize the best mode, you know, in detail, as it has to. And in doing so, it focuses on the use of temperature in the calibration data, but it consistently uses

the word "may" with respect to that or talks about it as involving an embodiment.

So, for example, you were referred to column 3 of the patent and then to this little portion at the end of column 3 that talks about methods of calibrating.

First off, note that this is talking about methods of creating calibration data, essentially, calibrating the calibration control circuit. But it talks about "The present invention also embodies." You know, that's another way of saying what the patent says repeatedly: Here's one embodiment. Here's another embodiment. Here's another embodiment. The invention encompasses all of these embodiments.

So, for example, if you start up earlier, you know, all of paragraph 3 is, you know, "in another embodiment," "in another embodiment," "in another embodiment," you know, it's just -- "in another embodiment." Every single paragraph starts with "in another embodiment."

Now, I guess the patent drafter is being punished for using a slightly different phrase in the last paragraph, because he says, "The present invention also embodies," but basically it means "in another embodiment." And so then it will talk about using temperature.

The focus properly -- I mean, a terrific place to focus on is Claim 1. I'm glad they talked about it some. You

look not just to the specification, but you start with the claim itself. And they correctly point out that the claim itself at various points uses the word "temperature."

So, for example, the last element is "The calibration control circuit interfaces with said temperature input and load voltage input to calibrate the calibration data stored in nonvolatile memory."

So that's an issue. You know, temperature is expressly used there. But what that means is -- first off, it's not at issue in this claim construction hearing because that was not a term that the parties sought to have the Court construe. It does call for temperature to be used, but it does so expressly. So it would be unnecessary, redundant, and inappropriate to just import the use of temperature in the phrase "calibration data," which doesn't require the use of temperature until you get to Claim 9.

And, you know, I would say just the fact that they don't call it "calibration data," they're talking about data for the droop outputs and sense outputs as stored in nonvolatile memory; and both parties are, in their construction of "calibration data," saying it's the data in the nonvolatile memory that's used for droop and sense outputs. They're talking about the calibration data. And in one embodiment they're saying you can have that data matched up with temperature, but there are others, as our experts said

in their declarations, Dr. Melvin in both declarations on file, that the provisional in particular talks about examples where temperature data is not used to create the calibration data. And it can be used after the fact, and the patent talks some about that.

Thank you.

THE COURT: Thank you.

MR. HIRSCH: Your Honor, very, very briefly, two quick points.

Again, with respect to Claim 9, Claim 9 does not refer to calibration data. When drafting a claim, if you're referring back to the data that has already been referenced in Claim 1, you'd say "said calibration data." They don't. They're talking about data for the sense and droop outputs. After you've adjusted the sense and droop outputs using the calibration data, then that data, the data for the sense and droop outputs, not the calibration data, relates to temperature. Claim 90 could not create a claim differentiation. It doesn't refer to calibration data.

Finally, Mr. Love referred to embodiments and argued that in only embodiments does calibration data relate to temperature. I direct Your Honor's attention to column 5. In the first full paragraph -- it starts at line 15 -- it refers to "this invention," not an embodiment, not an example, but "this invention."

Then at line 18, that paragraph refers to temperature-independent droop settings. The last line of that paragraph, line 28, refers to current that is shared equally, regardless of temperature.

And in that next paragraph, starting at column 5, line 31, again, referring to "this invention," it states that "This calibration data is the data that calibrates the droop and sense settings over various temperatures," not an example, not "may," "this calibration data."

Thank you, Your Honor.

THE COURT: I have a question for you. What information, from your perspective, is stored in the nonvolatile memory? Is it only calibration data?

MR. HIRSCH: No, there can be other data stored in nonvolatile memory.

For example, in Claim 9 it's talking about nonvolatile memory can also store this data for droop outputs and sense outputs. When the claims meant to say "calibration data," they did. That is something else that can be stored in the nonvolatile memory.

THE COURT: And from your perspective, that doesn't matter to the claim construction which you're proposing?

MR. HIRSCH: What's stored in nonvolatile memory?

THE COURT: Right.

MR. HIRSCH: It only matters in the sense that there

are portions of the specification that explain that the data that can be stored in nonvolatile memory -- calibration data -- has this relationship with temperature. Our construction doesn't require the data to be stored in nonvolatile memory if that is what Your Honor is asking.

THE COURT: My question is: If other things can be stored in nonvolatile memory, is the stuff that's in the nonvolatile memory also calibrated?

MR. HIRSCH: I'm sorry. Also --

THE COURT: The other things in the nonvolatile memory -- for example, outputs that they're getting regarding current and voltage -- if that information and data is also stored in the nonvolatile memory, is there a calibration that occurs as regards those things as well?

MR. HIRSCH: The other data?

THE COURT: Correct.

MR. HIRSCH: I think that is separate from our construction. Our construction wouldn't require one way or another.

THE COURT: So from your perspective, it doesn't matter.

MR. HIRSCH: If other data, other than calibration data, is calibrated? I think that's right.

THE COURT: Thank you.

MR. HIRSCH: Thank you, Your Honor.

THE COURT: Next.

MR. SUMMERSGILL: Your Honor, we're going to turn to the next term, which is "said temperature data is used by said calibration control circuit to adjust said sense outputs and said droop outputs."

If we could pull up slide 2, please.

So the term at issue is "said temperature data is used by said calibration control circuit to adjust said sense outputs and said droop outputs." And we underscored the word "and" for a reason that will become clear.

If we turn to slide 3, Intel, we propose to construe this term to have its plain meaning, that "the calibration control circuit uses the temperature data to adjust both the sense outputs and the droop outputs."

Plaintiffs, in contrast, are proposing to change the meaning of the limitation, to insert the phrase, "one or more," such that temperature data need only be used to adjust one or more sense outputs or droop output settings.

So if we pull up slide 4, the parties' primary dispute regarding the construction of this term is whether the word "and" in the claims means "and" or whether it can also mean "one or more."

Now, in their reply the plaintiffs tried to argue that there is no dispute over the word "and." What they wrote in their reply -- this is at page 24 -- is "There is no

controversy surrounding the meaning of 'and.'"

But if we could put up slide 5, that's precisely what the dispute is. So on the left we have the claim language, and on the right we have plaintiffs' claim construction arguments.

So on the left the claim language requires "and." On the right, plaintiffs argue -- this is from their briefs -- "The disputed phrase" -- i.e., the phrase we have on the left -- "only requires that temperature data to be a factor in changing at least one of the droop and sense outputs, but not necessarily changing both."

And then at page 23 they say, "Nothing in the intrinsic evidence" -- i.e., the claims and the specifications -- "mandates that both sense and droop output settings change based on temperature data."

So the dispute really is what the meaning of the term "and" is. And we submit to Your Honor that "and" means "and."

So let's turn to slide 6.

As we said, the claim term itself states that temperature data is used to adjust sense outputs and droop outputs. Again, "and" means you've got to do both things. Simply put, "and" means "and."

And, in fact, the Federal Circuit has addressed this very question in the *Leseman v. Stratus* case that we cited in

our brief. This is on slide 7. They addressed this precise issue. There were two limitations and there was an "and." And the Court held that the word "and" is conjunctive; and, as a result, those two elements that are separated by the "and" are both required. What it said was the second/third die component must both be received within a downstream side of the first/second die component and have this required position.

Now, at the beginning of the argument, the plaintiffs explained that Mr. Love, Mr. Flack, and Mr. DeRouin would be arguing. And that meant all three of them would be arguing, presumably not just that Mr. Love would argue. "And" means "and."

Second, turning to slide 8, our proposed construction is consistent with the specification. And I'll go through this relatively quickly, but column 9, lines 25 to 27, explains that the calibration control circuit controls the adjustments to the droop amplifier via the droop output and the sense amplifiers via the sense outputs.

And then at lines 50 to 52, the same column, it says that the controller interfaces with nonvolatile memory that holds temperature-dependent settings of the droop output and sense outputs, both indicating that it's making adjustments for both droop and sense.

If we could jump to slide 9, please, to the extent

there was any question, we also asked the inventor, the non-plaintiff inventor, about this, and he confirmed it as well. This is from his deposition.

"Question: Okay. So in your view, the high-level idea of the '944 invention is simply calibrating a current sensing circuitry and separately calibrating a droop function? Do I have that right?

"Answer: Yes, and obviously we discussed earlier about the temperature."

Now, the plaintiffs' primary argument in their brief with our construction is they argue we're reading out some embodiments where only the droop is adjusted, and they say we read that out.

If we could pull up slide 10, please.

And they cite to this portion of the specification in support of that argument. And this portion of the specification states that "This invention is a new and innovative active current sharing application that can result in near perfect current match across phases of a multiphase regulator."

And then in the next sentence it says that "This invention also provides accurate temperature-independent droop settings that can be programmed for the field." And they point to that and say, Look, this is an embodiment in which only droop is adjusted for temperature.

The problem with this argument, if we can add the rest of the text, is that they simply deleted or omitted -- unintentionally, I'm sure -- but left out the portion that refers to the sense being adjusted for temperature.

So it goes on to say, "The disclosed circuit is digitally calibrated to compensate for the inaccuracies of the current sensing elements." And then it says, "The current sensing mechanism is adjusted by the calibration parameters, such that the overall gain of the sensing mechanism in all phases may be matched and the total current across all phases is shared equally regardless of the temperature."

So this portion talks about adjusting the droop for temperature and it talks about the fact that you can achieve near perfect current match across all phases; in other words, you've got multiple different current sense circuits sensing current in different phases, and you can achieve near perfect current match across, regardless of the temperature, because you're making adjustments for temperature.

So this is not an embodiment in which only droop is being adjusted. It is another embodiment in which both sense and droop are being adjusted.

So I'll turn to slide 15, please, and I'll close with this.

Again, the claim language is "and." You have to use the temperature data to adjust both the sense outputs and the

droop outputs. And the plaintiffs are arguing that "and" can mean "one or more," and that is just incorrect. They read the "and" -- they're trying to rewrite the claim to remove the "and" from the claims.

THE COURT: Thank you.

MR. SUMMERSGILL: Thank you, Your Honor.

MR. FLACK: Good afternoon, Your Honor. Ronnie Flack for the plaintiffs.

I'd like to start by just addressing something that's not been addressed by the other side, and this kind of weighs heavy with what we've talked about all morning. Both sides have cited the *Continental Circuits v. Intel* case and talked about how dispositive the specification is.

Something we pointed to our in our reply brief was the fact that on column 4, line 63, of the '944 patent, it states that "All conjunctions used are to be understood in the most inclusive sense possible." The specification tells us exactly how to understand "and." There should be no disagreement over how to understand "and" in the most inclusive sense possible.

So that's not addressed in the briefing by Intel and not addressed by Mr. Summersgill so far. And that -- again, that is problematic for them because that's giving the specifications guiding us to how to interpret Claim 1.

And further in the specification, aside from just

that guide there, the specification, as you've heard a number of times today, uses the word "may" a number of times to discuss embodiments and uses this type of permissive language when discussing adjusting based on temperature.

And so if we're looking at the specification with "may" and this kind of guide that the "and" needs to be the most inclusive version of "and," then it seems to me that the plaintiffs are arguing that "and" needs to be joint and several rather than just joint, and that's going to be the most inclusive version of "and."

And while on my opponent's slides, they kind of like to highlight that we are saying "one or more sense output and droop output settings," we're still saying "sense and droop output settings." The "and" is still there. Our construction just adds a modifier or qualifier in front of "and" to give it the broadest meaning possible, the most inclusive meaning possible, the same way that they added "both" to the sentence that they said was plain meaning.

So by adding a qualifier in front, we're not trying to change the claim language, we're not trying to rewrite the claim language. We're just trying to follow the specification that says "and" is to have the most inclusive sense possible.

Also in the specification, if we're -- maybe the specification isn't as clear as to how that sentence -- that, you know, we are to construe conjunctions as broadly as

possible, the specification gives us, right after that, right after column 4, line 64, it gives us an example of "or." It says that whenever you see the word "or," as an example, it says that you construe "or" to be understood as having the definition of a logical "or" rather than the illogical exclusive "or." So it's telling you that any time there's a question on exclusivity, you're going to take the broader version.

Now, the one thing that I find that is very interesting about the parties' use of "and" in their own case is you can look at -- and I'm happy to -- if you look at Intel's own instructions in discovery requests, they actually state, "The connectives 'and' and 'or' shall be construed either disjunctively or conjunctively, whichever makes the request most inclusive."

There should be no dispute among everyone here that when we're saying "and" is the most inclusive version of "and" --

THE COURT REPORTER: I'm going to ask you to slow down and repeat.

"There should be no dispute among everyone here" --

MR. FLACK: -- that the most inclusive version of "and" is going to be joint and several. So it would be "sense or droop" or "sense and droop."

THE COURT: You're asking me to use Intel's

discovery requests in order to determine how to construe a patent claim?

Because if I start looking at discovery requests, I'm going to go down all kinds of different rabbit holes that you don't want me to explore, right?

MR. FLACK: Your Honor, that's absolutely correct.

I was using that as an example that we do understand it can be a broader term, and "and" can be understood to be broader.

THE COURT: Okay. Thank you.

MR. FLACK: Yes, Your Honor.

And so with that understanding, I think that it's, you know -- I think that -- I think that "and" should be construed broadly, in its most inclusive sense.

One thing I would like to address is a few points from Intel's cases. You know, they give you the *Leseman* case, the Federal Circuit 2018 case, as case law saying "and" means how it's described in the case. However, as I noted earlier, the patent at issue in that case does not contain the same specification language that instructs conjunctives are to be used broadly. So that becomes problematic in trying to use that case to construe the language here in the patent that clearly provides guidance on how to understand it.

One other thing that I would like to just clear up for the Court -- I'm sure it was unintentional. They referred

to the '944 patent, column 5, lines 16 through 30. And I just want to clarify for the Court that on that particular point -- oh, there we go. It's a small detail, but I think it does weigh to some importance. There was actually a misquote on their slide and what they were talking about. The last sentence of that statement actually says, "regardless of temperature or the load."

THE COURT: I'm sorry. Where are you?

MR. FLACK: It's right here at the bottom (indicating).

THE COURT: Okay. Thank you.

MR. FLACK: And so the slide that they had up actually had "of" there, which kind of changes the meaning. And I think the "or" is indicative of the idea of the patent, something we've been talking about today.

The patent discusses, even in the abstract, even in the Summary and the Background of the Invention, that there are problems with manufacturing variations -- a common theme we've heard -- and temperature variations. So the idea that you can't -- the idea that you have to have both --

THE COURT REPORTER: I need you to slow down. I couldn't understand you.

"The idea that you have to have both" --

MR. FLACK: -- temperature -- you have to have temperature to adjust both sense outputs and droop outputs

would -- would exclude any embodiments where only one of those may need to be adjusted based on temperature and the other one could be adjusted --

THE COURT: Just relax.

MR. FLACK: I'm sorry.

THE COURT: You talk so fast I can't keep up with you myself.

MR. FLACK: I apologize. I will take a deep breath.

THE COURT: Yeah, take your time.

MR. FLACK: Okay. That the sense and droop -- it would exclude embodiments where the sense outputs or the droop -- one of the sense outputs or the droop outputs, only one may need to be adjusted based on temperature, and the other one could be adjusted for manufacturing variations. So that's why the "and" needs to be construed broadly for those kinds of constructions and embodiments.

And that's why, you know, as we've talked about a number of times, the patents, you see language referred to as "may" and as permissive, because that is kind of guiding us that it doesn't always have to be -- both do not always have to be adjusted based on temperature.

And one last thing that I would like to just put up, just to kind of go over, is there was a phrase in the -- this is in the Background of the Invention, in column 1. They focus on this, starting at this phrase right here, "another

phenomenon affecting current sensing circuit" -- and of course, "another phenomenon." There is a first phenomenon, which is referred to earlier, that is the manufacturing variations in this paragraph, that these elements have a high degree of variation from one to another, over changing environmental conditions and over production lot variations.

And it says that these -- historically using these elements to sense current causes a mismatch in the current between the phases, and there are no reasonable solutions to this mismatch.

So, again, variations and temperature both, that's the issue. And so the idea -- I think the heart of all of these discussions so far have been whether the patent is simply covering temperature or whether it's broader and covers both manufacturing variations and temperature variations.

So based on that, we request that the Court adopt the plaintiffs' construction and construe "and" in the most inclusive sense possible.

THE COURT: Thank you.

MR. FLACK: Thank you, Your Honor.

MR. SUMMERSGILL: Your Honor, three very quick points.

First, as to the column 4 language that says that all conjunctions must be construed in their most inclusive manner possible, well, fine, but "and" still can't make equal "one or

more." "And" does not equal "more." "And" equals "and."

Second, if we put up slide 3, Mr. Flack said when they added "one or more" to the claims, it didn't change the meaning of the claims, it didn't undo the "and." Well, then why did they add it if it doesn't change the meaning of the claims?

And, finally, slide 6, which is the claim language, Mr. Flack just said that the claims don't require that both be adjusted for temperature; that, instead, one of them could be adjusted just for manufacturing variations. That's directly contrary to the claim language, which says that the temperature data is used to adjust said sense outputs and said droop outputs.

Thank you.

MR. JEFFREY LOVE: Your Honor, I think you scheduled us to close up shop in about 10 minutes, so I will stick to that schedule and go through this one briefly, unless you indicate otherwise.

MR. SUMMERSGILL: And could I just ask, if we are going to stop right at 1:00, that Mr. Love could use five minutes, and then Mr. Zubler could use the other five minutes.

THE COURT: Sure.

MR. SUMMERSGILL: Thank you.

MR. JEFFREY LOVE: It will be five minutes to get the camera going, and then you're up.

All right. So this -- the issue here is that you'll see in Claim 1 --

THE COURT: What term are we looking at?

MR. JEFFREY LOVE: I'm going to put it on our screen here. Actually I've got to find the -- pardon me.

We'll go with this one. Claim 1, it says, "The calibration control circuit interfaces with the nonvolatile memory to store calibration data."

And the parties' differing constructions of that, it turns on whether, when it says "to store calibration data" and it doesn't say to -- where you store it, whether you should import into that the idea that it can only be stored in nonvolatile memory, even though it doesn't say that. And he'll have his arguments as to why.

So sorry about this. This is my sloppy copy. But what we've got is "The calibration control circuit communicates with nonvolatile memory to store calibration data in any memory." And they have it "writes the calibration data into nonvolatile memory." So those are the two different constructions.

And, obviously, my main argument is that it doesn't say where you store it, so you can store it anywhere. It doesn't create that limitation.

And while they point out they're going to -- in their briefs that the patent often talks about storing data in

nonvolatile memory, it doesn't always, you know. And so I just wanted to point out that here's column 5. At the end of column 5 -- well, first off, up above, in the middle, it says, "This calibration data may be stored in nonvolatile memory," so, again, showing that it's an option.

THE COURT: Why does this all matter? What is this issue, from your perspective? Why is this important to the Court?

MR. JEFFREY LOVE: Well, because we've got a claim that -- that talks about taking -- actually a claim element that is not -- we haven't asked it to be construed. It's the last one where you take the calibration -- you calibrate the calibration data.

And we understand that to mean that you've got this controller in the calibration control circuit. It's basically the computer running the program. And it's going to take that calibration data, and then it's going to adjust it, calibrate it, based on various inputs, as stated in the last element.

And when it does that, when a processor is going to get data from nonvolatile memory, calibration data, a processor has to store it somewhere. And so the way these things are going to work is it's going to store it in nonvolatile memory.

THE COURT: Yeah, but in the context --

MR. JEFFREY LOVE: In volatile memory, rather.

THE COURT: In the context of your litigation, what is this important for? Why is it that this is important to you?

MR. JEFFREY LOVE: Well, because if -- you know, if they get the patent to say, okay, it's going to -- the calibration control circuit is going to get the calibration data and make adjustments to it and then store it again in the non -- nonvolatile memory -- nonvolatile memory sometimes fuses. You know, those are written to once. You don't overwrite them. Or it could be other types of memory where you can't -- you can't write new information to them after the chip is made.

And what these claims are addressing is adjustments to that calibration data that are made on the fly, dynamic calibration. So you heard a little bit about two kinds of calibration, that there's calibration at the factory, and then there's dynamic calibration as situations are changing. The temperature might be rising in the chip, other things happening.

And so what you have is a processor in that calibration control circuit that's going to get some of that old calibration data, and then it's going to take those current conditions, whether it's temperature or other things, and it's going to start cooking with it. It's going to be calibrating or adjusting the calibration data and using that

to be the sense and the droop outputs.

And they want to throw a wrench in our machinery by saying, oh, no, the processor, when it's storing the adjusted calibration data, it has to be storing new data to whatever the nonvolatile memory is, which may be impossible, you know, in effect, because that's just not how processors work.

And so you'll see in our --

THE COURT: So the reason it's important to you is because from their perspective if it isn't stored in the nonvolatile memory, there isn't infringement? Am I --

MR. JEFFREY LOVE: Yes.

THE COURT: -- saying that correctly?

MR. JEFFREY LOVE: That's correct.

THE COURT: That's what I wanted to get at.

MR. JEFFREY LOVE: I'm sorry. I'm sorry.

I would say that's almost a theme of almost every single dispute.

THE COURT: Now tell me why.

MR. JEFFREY LOVE: And so why is because when it doesn't say that it stores it in nonvolatile memory in the patent, and including the patent claims, when it wants to say that you're going to write data to nonvolatile memory, you do so.

So here, for example, if I can get it to focus -- there you go -- you've got Claim 19, for example.

It talks specifically about writing to nonvolatile memory. Similarly, in the spec it often talks about writing or storing in nonvolatile memory. But they don't do that in this claim term that we're dealing with, this Claim 1.

And there's one -- I know I've got to go, so I just want to make one parting --

THE COURT: That's okay. I asked you some questions. I'll give you a little more time, and I'll give them some more time.

I like to pretend I'm in the Court of Appeals. They do that.

MR. JEFFREY LOVE: Everyone has like 45 minutes. They have nothing else to do that day.

So I'd like to direct your attention to the reply declaration of Intel's expert, so it's document 146-5. And he's talking about something else, but he says something helpful, I think, to this issue. So paragraph 40, they're talking about the word "store."

And then he says at the end, page 13, "Computer scientists routinely refer to storing data in memory generally, not limited to volatile memory," and then he cites to certain things. Well, not limited to, but not limited to nonvolatile memory either. And that's what you have in this claim term. You have storing generally, not limited to nonvolatile memory, so it shouldn't be construed with that

limitation.

THE COURT: Thank you.

MR. ZUBLER: Good afternoon, Your Honor, Todd Zubler for Intel Corporation.

You asked the question, to start off, why does this matter? It matters, I think, Your Honor, for two reasons. First of all, it matters because the claim says and refers to one type of memory, nonvolatile memory. The dispute is whether data can be stored in any memory or nonvolatile memory, but the claim mentions only nonvolatile memory. The claim specifies a lot of different things that have to be in the infringing system, but it mentions only one type of memory, nonvolatile memory.

And the reason it matters, then, for this case is because the plaintiffs realized early on in this case that this limitation would have required nonvolatile memory. If you read their Complaint, paragraph 51, they accused us of infringing based on storage of calibration data in nonvolatile memory. There's no mention in their Complaint of storing data in other types of memory.

Then discovery proceeded. They discovered that the thing that they accuse of being the calibration control circuit, they found out that that structure doesn't store any data -- calibration data or otherwise -- in nonvolatile memory. That's why we're here. That's why this matters.

If I could -- I'll just be brief and flip to the key points.

The basic point here is that they are hypothesizing, the plaintiffs are hypothesizing that this claim can be infringed by some type of memory that isn't mentioned in the claims, as I mentioned before, that's never mentioned in the specification as holding calibration data, and that actually would run totally counter to all the textual clues and information we have in the claim.

So if we could go to slide 8 real briefly, which is the claim language, the claim language starts by saying that "the calibration control circuit includes an interface with nonvolatile memory." So we know that the calibration control circuit talks to nonvolatile memory.

And then it has three limitations that talk about calibration data and where that fits in. And the first limitation that's highlighted, after the preamble, says, "said nonvolatile memory stores calibration data." So we know that calibration data needs to be in nonvolatile memory.

The second highlighted limitation explains how that data gets into nonvolatile memory. It says, "The calibration control circuit interfaces with the nonvolatile memory to store the calibration data."

Those two functions are totally tied together. The calibration control circuit has to interface with the

nonvolatile memory. Why? So it can store calibration data.

Mr. Love's argument would effectively read out, I think, the "interface with said nonvolatile memory" language here. He would just say the said calibration control circuit stores calibration data. It doesn't matter where. It doesn't matter how.

That language of interfacing with said nonvolatile memory is really important. The natural reading of that is that the calibration control circuit interfaces with the nonvolatile memory to store the calibration data there.

And we're not done. The very last limitation that's highlighted at the bottom talks now about what happens to that calibration data that's in the nonvolatile memory. And this limitation says the calibration control circuit, it interfaces with the temperature input and the load voltage input to do what? To calibrate the calibration data. And where is that calibration data? It's, again, stored in nonvolatile memory.

So the only reference in the claims to any type of memory of all the different structures that are included, the only type of memory is nonvolatile memory.

That reading is entirely consistent and fully reinforced by the specification, which talks only about storing calibration data in nonvolatile memory. There is never an embodiment that discusses storing calibration data in volatile memory. We have a couple examples here. The patent

refers to "the controller," which is part of the calibration control circuit, it stores the data in nonvolatile memory.

And, you know, I would just refer you to -- this is actually an important part of the invention. The inventors that we deposed, the non-plaintiff inventors, talked about the importance of having nonvolatile memory, having the calibration data in nonvolatile memory, because it can be reused.

And, real briefly, just to address Mr. Love's -- a couple points of his, I'll advance to slide -- this is slide No. 14, for the record.

Mr. Love advanced a theory or an argument that there is a claim differentiation problem again here, that we are effectively reading Claim 19 to refer to the same thing that we're talking about in Claim 1, because Claim 19 talks about an external controller that can write to nonvolatile memory.

Totally different context, Your Honor. There is no claim differentiation. Remember, claim differentiation is a doctrine that prevents two claims from being duplicative. And if our construction did make two claims duplicative, that would be a problem with it. Our claim construction doesn't do that. Our claim construction refers to how the calibration control circuit, what it stores to nonvolatile memory. And, most importantly, Claim 19 doesn't mention writing calibration data at all. It's really just talking about writing data of

any kind to nonvolatile memory. It's not talking about calibration data.

And so, finally, Your Honor, I would just make the general point again that the memory that they're hypothesizing, that they're kind of making up, into which calibration data can allegedly be stored, it's a data that's not in the claims, it's never mentioned in the specifications as holding calibration data. And it would effectively read out that language in the claims that says that the calibration control circuit interfaces with nonvolatile memory to store calibration data.

THE COURT: Thank you.

MR. JEFFREY LOVE: Briefly?

THE COURT: Sure.

MR. JEFFREY LOVE: There we go. Claim 1.

So the last element there that Intel's counsel referred to, "the calibration control circuit interfaces with the temperature input and the load voltage input to calibrate the calibration data stored in nonvolatile memory," we agree there's nonvolatile memory referenced in the claim, and it stores calibration data.

But how is the control circuit going to calibrate it? The calibration control circuit is going to do that because it has essentially a processor, a processor inside it that can run an application, run a program. So what it has to do is

fetch the data and then made adjustments to it.

It fetches it from, in the words of the tutorial, the safe in the basement. You know, it goes down and has to get that calibration data from nonvolatile memory. And then it's got to run its program. It can't run its program without storing that in -- almost always in volatile memory. That is, it puts it on the kitchen shelf to start cooking with it.

And that's what Dr. Melvin talks about in both of his declarations on this point. And that's why, when it says that "the calibration control circuit interfaces with the nonvolatile memory to store calibration data," it is interfacing with the nonvolatile memory, but it's doing it in order to essentially fetch the calibration data and store it in any memory; and really, as a practical matter, it's going to be stored in volatile memory.

And when they say that the patent never talks about storing things in volatile memory, well, again, this was column 5 that I referred to before, at the bottom of it. It does refer to "the data may be stored in memory." That's a general term that, as their own expert acknowledges, can refer to volatile or nonvolatile memory.

And Dr. Melvin, in his declaration, states that it's inherent in the controller, that's part of the calibration control circuit, which is either going to be a processor or a state machine, that is inherent that to do its job, it's going

to be storing data in volatile memory, you know, so that it can cook with it.

Thank you.

THE COURT: But that's true universally. If there's a processor, there's volatile memory.

MR. JEFFREY LOVE: Yes. Yes.

So this is saying -- this is talking about the step of the calibration control circuit interfacing with the nonvolatile memory -- that is, to store calibration data -- meaning to fetch the data, to store it. And then what does it do with it? Then you have the last element where it's going to calibrate, calibrate the calibration data.

THE COURT: Thank you.

MR. ZUBLER: Just one thing, Your Honor.

THE COURT: Go ahead.

MR. ZUBLER: Mr. Love just advanced the argument that the calibration data can be stored in volatile memory and advanced different reasons why you might want to do it. None of that is in the claims. None of that process he talks about, storing calibration data in volatile memory, is mentioned in the specification. We think their construction is a very strained reading with no support in the claims or specification.

THE COURT: Thank you.

I will take this case as submitted and place it under

advisement.

Thank you very much. We are in recess.

COUNSEL: Thank you, Your Honor.

(Proceedings concluded.)

--oOo--

I certify, by signing below, that the foregoing is a correct transcript of the record of proceedings in the above-titled cause. A transcript without an original signature, conformed signature or digitally signed signature is not certified.

/s/ Nancy M. Walker *7-15-19*

NANCY M. WALKER, CSR, RMR, CRR DATE
Official Court Reporter
Oregon CSR No. 90-0091

B

C

D

G

H

J

K

L

M

N

O

P

S

T

U

V

W

Y

Z